THE OIL WEEKLY

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The Oil Man's Calendar

OCT. 5- 6	American Gas Association, La Salle Hotel, Chicago.
8-10	Texas Mid-Continent Oil and Gas Association, Dallas, Texas.
12-14	American Society of Mechanical Engineers, Rochester, New York.
14-16	AIME, Petroleum Division, Los Angeles.
19	National Stripper Well Association, Wichita, Kansas.
19-21	Independent Petroleum Association, Wichita, Kansas.
27-29	National Safety Congress and Exposition, Chicago.
29-31	AIME Petroleum Division, Austin, Texas.
30-31	Illinois Mineral Industries Conference, Urbana.
NOV. 6	California Natural Gasoline Association, Los Angeles.
9-13	American Petroleum Institute, Palmer House, Chicago.
16-18	American Institute of Chemical Engineers, Netherlands Plaza Hotel, Cincinnati.
17-21	National Chemical Exposition, and Industrial Conference, American Chemical Society, Chicago.
DEC. 2	New Mexico Oil and Gas Association, Artesia Hotel, Artesia.

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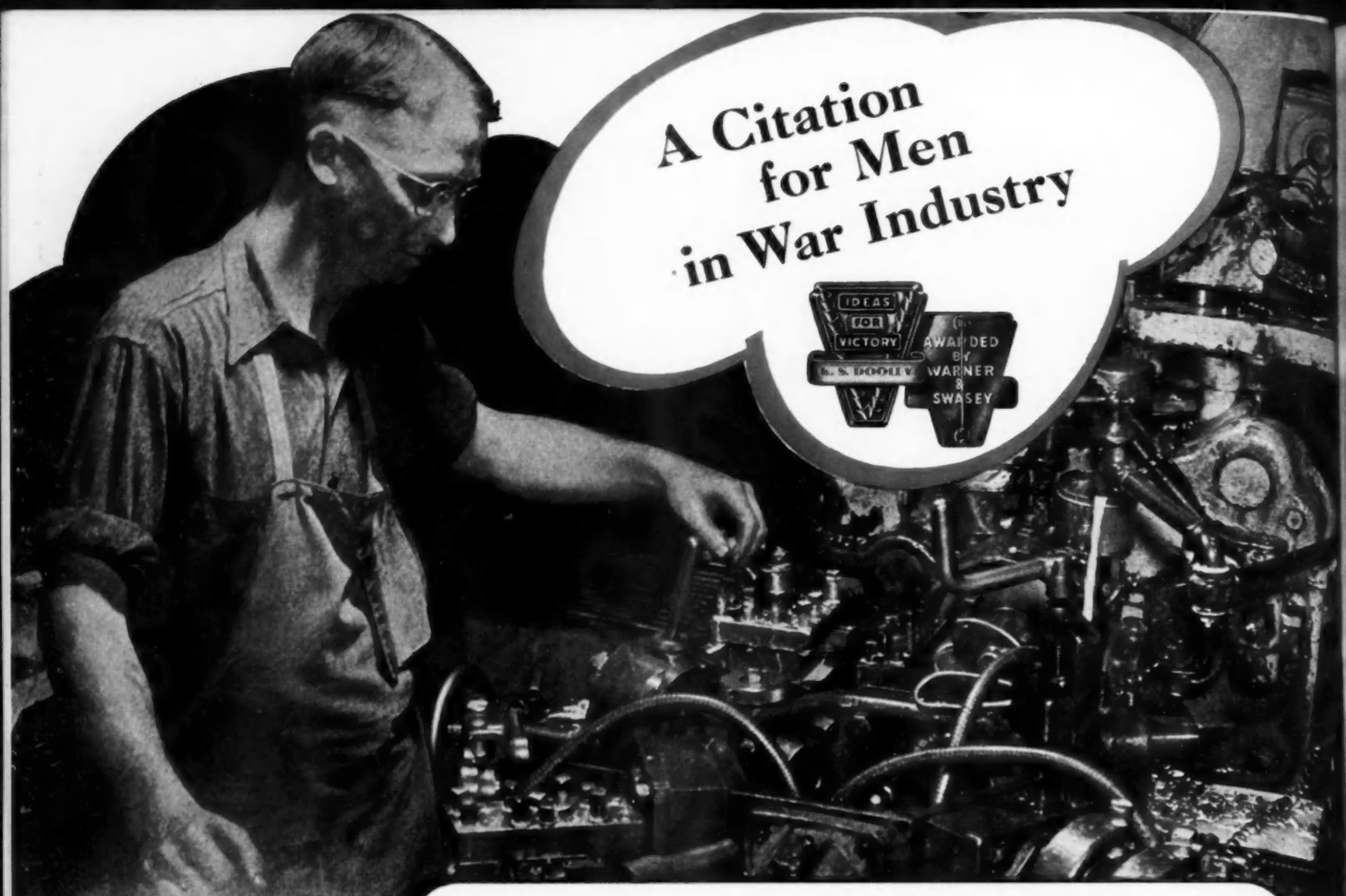
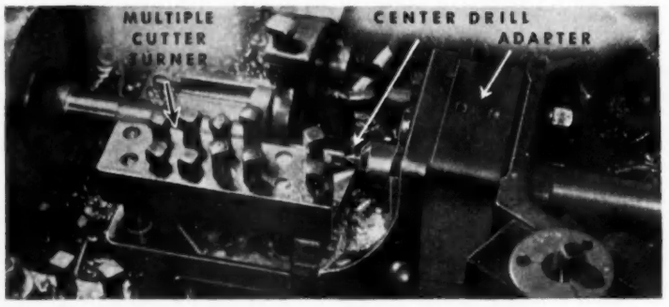


Ideas for VICTORY

—from the Production Lines behind the Firing Lines—

He Found a Way to Eliminate an Indexing Operation



Two set screws hold the drill holder solidly in the adapter. The rolls of the multiple cutter turner act as a steady support for the bar as the drilling cut progresses.

Turret lathe operator Karl S. Dooley, at the Caterpillar Tractor Co., Peoria, offers an idea particularly valuable to the operator who has all six turret stations full and still requires a center drilling operation to complete the job in one chucking.

The photo shows how a centering tool was rigged up and held in the multiple cutter turner. The center drilling is performed at the same time the last of several finished diameters is turned.

It takes real initiative and ingenuity to work out a time-saving idea like this and we are proud to present operator Dooley with a gold Victory pin for his contribution.

Many practical "Ideas for Victory" sent in by operators are published in "Blue Chips", a shop bulletin sent by Warner & Swasey to the homes of turret lathe operators. Make sure your turret lathe operators and learners are on the list to receive "Blue Chips" Write Warner & Swasey, Cleveland, Ohio.

WARNER & SWASEY FOR VICTORY

YOU CAN TURN IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

The Changing Panorama

Vast Difference in Transportation

WE HAVE read the Baruch report carefully and coupling the facts brought out in that report with other facts with which we are acquainted, it appears to us that the report itself is ultra-conservative in nature. We do not complain of this because the subject of the report was so important that it called for conservatism in its approach.

However, it would appear to us that those who made the report felt that they were providing substantial margins of safety which may not be required and there is a possibility that before the close of 1943 restrictions on tires may be substantially softened.

Throughout the report appears a thread of recognition which appeals to us very much. Those who wrote the report realized that a competitive situation, that individualism, that those factors which have built American industry, must not be forgotten. The report was not the mouthing of a shallow minded New Deal lawyer; it was substantial stuff.

We are not in accord with the theory, however, that gasoline should be rationed in those areas where gasoline is plentiful. We have this feeling because most of those states which have a plentiful supply of gasoline from refineries and crude oil within their own borders are states where the transportation problem is vastly different from that of the East. We seriously fear that from inexperienced men in OPA, devoid even of observation in Western States and in some instances devoid of that rare human attribute known as "horse sense" may wreck an economy under the guise of trying to save it.

How Much Aviation Gasoline Needed?

ALTHOUGH information is not published on production of aviation gasoline, it is evident that war developments have forced repeated raising of scheduled capacity.

President Roosevelt in May, 1940, asked for the amazing production of 50,000 planes in 1942. On that basis, prospective capacity for making 100-octane gasoline appeared adequate. But then came lend-lease purchases, the German attack on Russia, and Japanese conquest in the Pacific. Consequently, the goal for production of planes in 1942 was increased to 60,000, and that for 1943 was set at 120,000. Obviously, the program for manufacture of aviation gasoline has had to be increased accordingly.

Moreover, the required capacity still cannot be foreseen very far ahead. It would have to be greatly increased, for example, in the event of large-scale expansion of the present experimental plans for construction of huge cargo planes, designed to alleviate the war shipping problem.

So far there has been no serious threat of a deficiency of aviation motor fuel. But materials for expanding plant facilities are scarce, and some slowing down of work on plants has occurred.

Norwegian Tankers Do Big Job

NORWEGIAN tankers have hauled about half of all oil and gasoline sent to Britain from North and South America since the invasion of Norway, while sister merchant ships have similarly delivered a third of all foodstuffs and war materials.

Although Norway's population is under 3,000,000, the country is credited with contributing to the United Nations' cause a war service equivalent to that of a million-man army in furnishing its 4,000,000 gross tons of modern and fast ships and 25,000 seamen. This is what is left after sinking of a million tons—200 out of the 1000 pre-war ships—and loss of 1300 sailors.

The fleet affords the only income of Norway's exiled government, which requisitioned the ships when the Germans invaded Norway in April, 1940. The government thereby has maintained itself, paid employes, built an army, navy, and air force in territory of allies, and made payments on loans obtained before the war.

Sentencing a speeder for going 60 miles per hour, Detroit Traffic Judge George T. Murphy last week proposed that such violators be compelled to sell their tires to the government for resale to war workers. Taking tires from such people "would be fully justified in this national emergency," Judge Murphy said.

Drilling Under OPA Maximum Prices

THE Dallas regional office of OPA has notified the American Association of Oilwell Drilling Contractors that contract oil-well drilling and oil-well servicing are governed by the general maximum-price regulation.

This local ruling if enforced would mean that the highest price that could be charged in any given area would be the highest price charged by a contractor during March, 1942. Thus any drilling contractor who last March drilled a wildcat well automatically established a ceiling price for that area, regardless of whether he made a profit or sustained a loss in doing so.

Drilling of oil and gas wells under contract involves so many intangible factors that it is impossible to tell in advance what may be encountered.

The natural gas industry's big customer, the carbon black making business, depends heavily on tire manufacture for a market, and with genuine interest studies tires made synthetically from petroleum instead of natural rubber.

Axis Force Action To Increase Output

REPORTS out of Europe indicate vigorous effort of Germany to develop larger production of petroleum in fields under its control.

Unauthenticated reports indicate that the Axis has succeeded in materially stepping up production of various districts, especially these 6 fields: Lipse in Hungary, Gbelly in Slovakia, Pechelbronn in Alsace, Saint Marcet in Haute-Garonne area of France, the field near Kutina in Croatia, and Zisterdorf near Vienna in former Austria.

Vaunted German science and skill have not increased Roumanian production, but Nazi pressure has turned more Roumanian oil to German use, while cutting down shipments to Italy, Sweden, Vichy France, Switzerland, Turkey, and the Balkans, although apparently leaving Roumanian domestic consumption about unchanged. The Germans, through I. G. Farbenindustrie, also are negotiating for production by a Roumanian company of 3000 tons of Buna rubber annually from natural gas.

EDITORIAL COMMENT

Anti-Trust Laws and Efficiency

OF ALL the extraordinary situations created by the war, one of the most remarkable is the temporary shelving of portions of the anti-trust laws. Nobody questions the advisability of immunizing industry from these restrictive laws, which otherwise would cause serious inefficiency and impede the war production program. Consequently, it is a little hard to understand why more people do not question the economic desirability of those laws in normal times. If they interfere with efficiency in wartime, does it not follow that they would be conducive to inefficiency in normal time? If industry can do a better job for a nation at war by being permitted to do certain things banned by the statutes, could it not also do a better job similarly for a nation at peace?

Certainly, the war has shown that the anti-monopoly laws as they now stand are to some extent anti-efficiency laws, and therefore that they should be subjected to thorough examination and possible revision after the war, when there is time to devote to the matter.

The oil industry now is being directed by government to do numerous things that formerly would have brought down upon it an avalanche of prosecutions under the anti-trust laws. It is told to pool patents and technical information, to pool storage facilities in the East, to exchange products, to work out efficient arrangements for use of pipe lines and refineries, to carry out measures that will admittedly force out of business many service stations and probably some refiners and producers.

Having been perennially investigated and repeatedly charged with monopolistic practices, the oil industry has been so deeply imbued with fear of prosecutions, that it naturally was extremely cautious in undertaking any cooperative measures in the earlier stages of the defense-war period, particularly with the memory of the Madison trials fresh in mind—the trials that arose in consequence of cooperative measures taken under government sanction in an earlier period of emergency. Last winter and spring, responsible oil-industry executives stated as a matter of fact that they could be moving materially more oils to the East if they could carry out cooperative measures prohibited by the laws.

Not until June, 1942, did Congress give to the chairman of the War Production Board the authority to issue certificates affording ironclad statutory protection against prosecution under the anti-trust laws. Usually authorizing pooling of facilities or information, such certificates provide oil companies the needed protection in connection with pooling of patents and technical information in production of synthetic rubber, in manufacture of toluene, and in pooling of East Coast storage and marketing facilities.

In conforming with priorities and price regulations, the oil companies also take concerted action that they normally could not have undertaken on their own initiative without possible violation of anti-trust laws.

While the war has brought temporary loosening of the anti-trust restrictions, industry is made to understand clearly that the laws are still on the books, to be revived in full vigor and effectiveness after the war. The Department of Justice still can and does investigate and obtain indictments charging monopolistic practices, although it would have to appeal to the President to override requests of the Army or Navy to hold up during the war any anti-trust trials that would impede war work. Actually, some anti-trust litigation is under way, including suits for dissolution of a part of the oil industry as well as for dissolution of the Aluminum Company of America; although the chief trust-buster, Assistant Attorney General Thurman Arnold, has stated that if he can win the verdicts he will allow postponement of actual dissolution until after the war.

Besides Department of Justice investigations and indictments, another method that is being employed to keep the anti-trust laws fresh in mind is appearance of the department's representatives before Senate committes in hearings that gain wide publicity. Such testimony certainly keeps industry as well as the public conscious of the anti-monopoly laws, although some men of industry complain that it represents trial in the newspapers, without judge, jury, or defense attorney.

Held up over industry is the threat that anti-trust action might be achieved even in the face of wartime restrictions on the laws, by being handled as war-fraud or patent-violation suits.

In the mind of the American citizen interested vastly more in winning the war than in the small matters of social, economic, and business reform, there arises serious question of the advisability of the continuing emphasis on the great importance of the anti-trust laws.

Particularly is it questionable if suspicion and criticism of business men's cooperative efforts should be carried to the extent of keeping alive fear of prosecution and causing resentment.

If industry is to do a whole-hearted wartime service, it must have the whole-hearted confidence and support of the nation.

WASHINGTON ROUNDUP

By B. F. LINZ
Washington Correspondent

OPC Issues Formal Pooling Orders On Eastern Terminals

National Rationing to Be on Same Basis as in East Coast

Ceiling Price Put on Both Dry and Wet Natural Gas

Advertising Deductible as Expense for Tax Purposes

FORMAL adoption of OPC's plan for the pooling of supplies and facilities of all companies operating on the East Coast last week put that segment of the industry totally on a war basis of operation and set up a precedent which may be followed in other sections of the country as transportation conditions continue to tighten.

Expected to increase rail receipts by only 50,000 to 75,000 barrels a day, it is hoped the plan will offset any reduction which might otherwise be caused by the diversion of tank cars to the hauling of vegetable oils and chemicals and the slowing up of movement due to overloaded rails and bad winter weather, and was accepted by the companies on the ground that if there was a barrel of oil which could be moved and they did not move it they would be subject to criticism.

The desirability of the plan, however, was given emphasis by the fact that receipts of railroaded oil in the East Coast area appear to have reached their limit, for the time being at least, and difficulty is being encountered in maintaining records. For the week ended September 26, receipts dropped to 835,630 barrels a day from 856,710 barrels the preceding week, due to the fact that many cars were still bound back to points of origin.

Among the developments of the week was the enactment by Congress of legislation "freezing" wages and salaries at levels approximately those of September 15. Of some comfort to business interests, was a companion "freeze" of common-carrier and public-utility rates.

Recognition of the service rendered by the oil industry in furthering the administration's salvage, bond-selling and other drives was given in assurances by Commissioner of Internal Revenue Guy T. Helvering that expenditures for advertising in connection with such campaigns will be legitimately deductible in federal income-tax returns. Also deductible will be "institutional" advertising engaged in by concerns which have converted to war work but desire to keep their trade names and good will alive against that day when they will return to peacetime operations.

Senator O'Mahoney's committee which is seeking to widen exploitation of the oil potentialities of the public lands is preparing to engage in another series of hearings, in which it is indicated the question of price will be exhaustively canvassed. Coordinator Ickes, Price Administrator Henderson and other administration officials are scheduled to testify before the committee, and are expected to be questioned minutely about the price situation.

POOLING: Pooling of terminal supplies and facilities on the East Coast, under development by OPC over several weeks (THE OIL WEEKLY, September 21), was formally ordered by Coordinator Ickes September 29.

Under the order (Directive 59), the Seaboard area is divided into six zones, oil is to move in by rail in solid trains wherever practicable and will be unloaded only at selected, centrally-located terminals. Each zone will be assigned specific sources of supply in the West and Southwest.

All oil and products, both from outside the district and from East Coast refineries, will be pooled for allocation among the companies operating in the zone of reception, in proportion to their percentage of total sales in that zone in 1941.

Distribution from the terminals will be by truck and barge, so as to conserve railroad tank cars for the long hauls and speed up their turn-around. Where the Eastern terminals can be reached by pipe line, barge or tanker, shipments to them by rail will be reduced in proportion to the supply they can move in by those facilities, and shipments out of such areas will be permitted only to the extent of any surplus over production and receipts.

An important feature of the directive is the requirement for adoption of new minimum wartime specifications established by OPC for gasoline, kerosine, heating oil and industrial oil. While all companies will sell the same oil, as a result, it is provided that they may continue to market under their own brand names, and three grades will continue to be produced, as at present.

The concentration program is expected to speed up rail movement so as to minimize the reduction in tank-car deliveries which it is feared may occur now that the rail movement has reached a peak and cars are to be diverted for the transportation of seasonal vegetable oils, chemicals, etc., and there is a possibility that it may even permit a further expansion of the oil movement, now close to 850,000 barrels a day.

Emphasizing the great importance of the new program, Coordinator Ickes pointed to the duplication of effort and functional inefficiencies in the supply and distribution of oil as a result of intense competition between the companies.

"Over a substantial period, the benefits to the public of such competition far exceed the cost to the public of the inefficiencies existing at any particular moment," he admitted freely. "Without competition and its resulting duplications, the past record of the oil industry in supplying a constantly improving product at a constantly lower price would have been impossible.

"Under war conditions, however, we are no longer able to give the industry the critical materials necessary to continue the improvement of products; we have had to reorganize the industry's transportation system completely, and we have had to pile added costs on the industry by requiring the use of refining equipment for purposes for which it was never intended. In short, we

have had to deprive the public of the benefits of oil-industry individuality.

"We now take another step to eliminate individual company freedom of action by requiring the pooling of facilities and products. This is necessary to increase transportation efficiency to a point where increased deliveries will be possible, and to make available what supplies we have on a fair and equitable basis, so that the customer of one company will be no more favorably situated than the customer of another.

"Over a long period, the public would lose by such action, just as they lose by substitution of tank-car for tanker transportation, and the other necessary actions that have been taken. In the emergency, the public will gain. East Coast consumers will have more supplies and they will be more equitably distributed."

RATIONING: A 35-mile speed limit and an average of 5000 miles travel per year per car, already adopted in the Eastern States, face motorists in the rest of the Nation around November 22, as the Office of Price Administration last week speeded up its plans for merging the gasoline- and tire-rationing program into a single system designed to make effective the tire-saving recommendations of the Baruch rubber report.

Generally speaking, present plans for national gasoline rationing call for extension of the system now employed in the 17 Atlantic States and the District of Columbia, but there are intimations that, to achieve the 5000-mile average aimed at, it may be necessary to slice the unit value of gasoline coupons.

The program, OPA officials said, will be projected toward a decrease of 60

Decline in Productive Capacity Makes Discovery of New Fields Imperative, Ickes Tells A. I. M. E.

EVERY phase of Allied strategy in the war, including even the opening of the much desired second front, is contingent upon an adequate supply of oil, which may spell the difference between victory and defeat, Coordinator Harold L. Ickes told the St. Louis Section of the American Institute of Mining and Metallurgical Engineers October 1.

"Upon oil, more than any other physical thing, or attribute even, or characteristic, does victory depend," he said, and realization of this basic fact is the motivating impulse behind the administration's efforts to secure the production of all the oil needed but in such a way as not to menace the future of our reserves.

Asserting that "in certain grades and in certain strategically located fields, the situation is nowhere nearly as good as we should like it to be," Ickes cited as outstanding examples, the Illinois and California areas whose future, he said, is imperiled by lack of conservation efforts.

More than 150 new fields have been found in the Illinois-Indiana-Kentucky area since 1937, he told the engineers, but instead of promising to produce at moderate and sustained rates over a period of many years, more than half of the reserves have been produced in only five years.

"The eventual total yield now will be very substantially below what it might have been if conservative practices had been followed," he said. "An oil supply that could and should have been a source of wealth and more importantly still, of national strength for many years, has been tragically exploited and is now far on the road to exhaustion."

Additionally, Ickes said, the waste of natural gas has been "prodigious" and while it is impossible to determine exactly its extent, it is known that in the past three years it exceeded the state consumption of gas, valued at $120,000,000.

Scoring the "total and non-understandable indifference" to conservation which he said appears to prevail, the coordinator pointed to a similar record in California, but found comfort in that fact that the great majority of producing states have enacted protective legislation.

"While it is true that there are wells in our oil states which could produce more oil if restrictions were lifted, any increase today would be at the cost of productive capacity in months to come," he explained. "This would be a reckless method of sacrificing the future to a present lust for quick profits. If all the wells in this country were opened to their absolute physical capacity, we could probably produce today about 15,000,000 barrels in the first 24 hours. But the waste of gas energy and the disruption within the oil reservoirs below the ground, as an incident to these high-rate productions, would make such a productive capacity decline rapidly. It would be only a matter of a few days before it would be down to six or seven million barrels and within a very few months the wells would be incapable of producing even at their present restriction rate of four million barrels per day."

There are, he admitted, "self-serving operators who would be perfectly willing to see our oil reserves debauched in this fashion if it would mean a quick profit for them," but they are in a definite minority and "the oil industry as such, has set an example which every other industry and every other individual might well look to for inspiration and guidance."

The various plans put into effect by the industry and government agencies to get the most oil with the least expenditure of critical materials and to move it to where it is needed, have accomplished definite and concrete results, Ickes assured the engineers. Restriction on drilling operations have saved enough steel to make a half million two-ton "block buster" bombs, and large volumes of metal which have not been consumed have been saved by the salvaging of equipment in idle or unnecessary wells, the shifting of material from holders who cannot use it to operators who need it, the substitution of other materials in refining, the cutting down and reassembling of storage tanks.

"As I appear before you this evening," he added, "the oil industry, together with the members of the staff of OPC, are taking perhaps the most revolutionary step of all in their determination to strip for war. A unitization program is underway which is going in a very large measure, to mean the submergence of individual identities for duration of hostilities. Terminal facilities are to be shared by competing companies. The determination of what oil, of what kind, shall go to whom—and when—is to be subject to central authority. It is a comparative movement by which the many different companies and individuals in the oil business will operate in many ways, as a single industry working at the common task of winning the war and it is all being carried out on a voluntary basis."

The demand for the discovery of new fields is imperative, the coordinator asserted, and when found, they must be developed on the basis of scientific conservation, to assure that all the oil necessary for the winning of the war and for the peace to follow, is made available. Our discovery record during the last few years has been very discouraging," he said. "Everything that can possibly be done, needs to be done to encourage exploration."

percent in the nation's mileage, a figure which it was said was near attainment in the East.

Plans for nationwide rationing were put into the works by OPA even before Rubber Administrator William Jeffers ordered it, and as a result the system will be ready for introduction some two weeks earlier than had Price Administrator Leon Henderson awaited Jeffers' "go" signal.

The 35-mile limit on speed, ordered by Defense Transportation Director Joseph B. Eastman, went into effect October 1 for all vehicles except those operated by common carriers in scheduled regular-route service. The latter, including trucks and busses, were given until October 15 to rearrange their schedules. Emergency vehicles and those of the armed forces, of course, are exempt from the limitation.

Meanwhile, Eastern and midwestern householders, shivering in the first cool days of fall, prepared to go before ration boards about October 15 to "sign up" for heating-oil supplies which are expected to be cut one third under last year.

The sad news that the cut would be worse than the 25 percent which it had been hoped to settle for was given out by Paul M. O'Leary, deputy OPA administrator in charge of rationing.

Householders in the cooler sections of the broadened ration area, however, were permitted to fill their tanks prior to October 1 and oil used before that date was not to be charged against their winter allotment. They were required to check the oil in their tanks October 1 and report the amount on their ration applications, together with a statement of the consumption last winter, and the area of those rooms which require heat.

Home owners in the 13 Midwest States brought into the area, who may have hoped they would be less harshly dealt with than those in the East, were told in no uncertain terms by Deputy OPC Administrator Ralph K. Davies that it was going to be a case of equal treatment for all.

Davies emphasized that those who could should immediately convert to coal, and pointed out that the East must depend upon the Middle West for much of its oil because shipments from the latter area require a minimum amount of transportation facilities.

Reports from the Middle West disclosed that fuel-oil rationing in that area was causing considerable perturbation to industrialists and homeowners alike.

With a large number of new war industries, the area finds itself confronted with a shortage of coal while at the same time, it is represented, there is plenty of oil in pipe lines and refineries.

It is feared that the rationing situation may so disturb conditions as to necessitate the importation of large quanities of coal from West Virginia and Pennsylvania at a time when weather conditions and heavy demands on the railroads make transportation difficult.

Midwesterners coming to Washington emphasize that their section has no objection to rationing of fuel oil, but is disturbed over the implications of the situation.

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FUEL: Mixing of oil and coal to produce a liquid fuel suitable for use in many industrial oil-burning furnaces is held by the Bureau of Mines to be feasible, but adoption of such a scheme, it was admitted, would depend upon the ability to obtain the necessary machinery to pulverize the coal.

Reporting on studies conducted over a period of several months, Director R. R. Sayers outlined a plan which contemplates the mixing of pulverized coal and oil in central plants, from which the composite fuel would be delivered to industrial consumers just as fuel oil now is delivered. It is believed the fuel could be used without alteration of oil burners or furnaces, making conversion much cheaper than the installation of stokers to use coal and without any demand for steel or other metals.

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RUBBER: Adoption of the Baruch-report recommendation for the appointment of a rubber administrator, provided for in legislation passed by Congress and vetoed by the President, has not served in itself to heal the breach between the legislative and executive branches over the synthetic situation, it was disclosed during the week.

The threat of action to over-ride his veto was held over Mr. Roosevelt's head by Senator Willis of Indiana in introducing a resolution calling upon Administrator Jeffers to make 30-day reports to the Senate on the status of rubber supplies and the progress of rubber production.

Specifically, the Senator asked for periodic figures on the total national supply of crude and synthetic rubber and rubber substitutes; the total under contract for future delivery from abroad; the number, capacities and estimated costs of all plants designed to produce synthetic, its elements and the raw materials; data on plants under construction, and information on plants not yet started.

The "mere appointment" of an administrator, Willis declared, does not relieve Congress of "its responsibility to do everything within its power to attain an adequate rate of rubber production."

"Whether the future program will include attainment of the purpose of the bill sponsored by the Senate subcommittee and passed by both Houses of Congress, that is, to produce rubber from agricultural and forest products, is yet to be developed," he said.

"In the meantime, action on the President's veto of the congressional measure is being held in abeyance."

A "rather full" statement on the subject of rubber will be submitted to the Senate in the near future, it was promised by Senator Gillette of Iowa, chairman of the subcommittee which made the investigation leading to the introduction of the rubber legislation.

Jeffers Appoints Assistant

Jeffers' first step in setting up his organization was the announcement September 30 of the appointment of Colonel Bradley Dewey of Cambridge, Massachusetts, as his deputy director.

Dewey, who earned the Distinguished Service Medal as chief of the gas defense division of the Chemical Warfare Service in the last war and has served as a consultant to that division since, as well as a consultant on rubber problems to the Army Quartermaster Corps, is associated with the Dewey & Almy Chemical Company, one of the pioneers in synthetic-rubber research in this country.

The company, which was the second in the United States to use rubber latex on a commercial scale and one of the first to substitute synthetic rubber for the natural product, built a synthetic plant with its own funds this year, which went into operation in August.

Milk came into the picture as a possible source of rubber during the week, when Jeffers gave his approval to experimental work now being conducted by National Dairy Products Corporation in making the product and the B. F. Goodrich Company in its utilization.

"At present the process is still in the test-tube stage," Jeffers said, explaining that experiments give "some reason to hope" that material suitable for recapping tires eventually may be developed.

National Dairy Products Corporation is building a pilot plant with its own funds, but, the director emphasized,

the project offers no immediate relief as a rubber substitute and its potential promise is of value in connection with the long-range program.

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RATINGS: To clear up uncertainties regarding the application of the priority ratings provided in the new P-98b, Deputy Coordinator Davies explained September 28 that A-1-a ratings cannot be applied if materials can be obtained with an A-2 rating, and neither an A-1-a nor A-2 rating can be applied if the materials can be obtained without a rating.

These two ratings were assigned to deliveries of all materials used in the production branch of the industry and those used for maintenance and repair or as operating supplies in other branches of the industry, but were not intended to be applied to all orders.

It was explained that it is the desire of WPB to have the lowest possible rating used which will perform the function of assuring delivery, and it is not intended that the higher ratings in any order shall be used for all procurement by those to whom they are granted.

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INVESTIGATION: The question of developing crude oil reserves sufficient to meet present and future demands for oil products "should be a national and not an individual problem," Russell B. Brown, general counsel of the Independent Petroleum Association, told the O'Mahoney subcommittee in the brief filed in advance of hearings opening October 5 on greater development of the public lands (THE OIL WEEKLY, September 28).

The two barriers to intensive exploratory work on the public lands, Brown asserted, are the burdensome restrictions imposed on operators by Interior Department regulations and the price received by the producer.

Most of the onerous regulations were adopted during a period when conservation was being sought, he pointed out, and do not meet present-day requirements for emergency development.

The price situation is particularly important, he told the committee, because the whole burden of finding and developing new sources of oil falls upon the industry.

"At this time," he commented, "no governmental agency, so far as I know, is engaged in any effort to uncover new petroleum reserves, and has given no incentive to others to do so, except the granting of favorable priorities for materials and supplies necessary in the exploratory efforts.

"It is not sufficient to accord a favorable priority position under the present situation when on the other hand there is restrictive action taken by government in the nature of abnormally low price ceilings. The present price structure throughout the petroleum industry is subnormal. This is particularly true of crude petroleum."

Brown outlined at length the so far unsuccessful efforts which have been made to secure relief from OPA, whose procedure for securing exceptions to the price ceilings in the petroleum schedule "are so cumbersome that it is practically impossible for the independent oil producers to obtain any relief."

"In the face of the recognized power of the purchasing companies and of the announced opposition of the price administrator to any price increase," he said, "the individual operator is hestitant and feels somewhat helpless in the face of the difficulties thus placed in his path leading to an increase in the price of crude.

"Someone must provide a means of obtaining a proper price incentive for the production of crude petroleum or else we may find ourselves confronted with a shortage that will be embarrassing to our efforts. Should a national shortage of petroleum result from failure of proper authorities to act now the entire war effort would be seriously hampered.

"Should the thousands of independents in the petroleum industry be lost through improper consideration of their problems, the industry, if it survived, might be entirely controlled by a few. We could lose the competitive element that has made this industry so effective."

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GAS PRICES: Ceiling prices for natural gas, both wet and dry, were incorporated in the petroleum price schedule by OPA October 1.

Heretofore under the general maximum-price regulation, the switch of natural gas to the oil schedule, it was said, will bring a more equitable realization on prices for sellers of wet gas from which natural gasoline and other products are extracted, but will not increase prices of natural gasoline to the consumer.

Prices for casinghead gas during March, 1942, the base period for general price regulation, were lower than prices in October, 1941, the base period for schedule No. 88, for natural gasoline. By placing wet gas under the petroleum schedule, prices for that product are put in direct relationship with the prices of natural gasoline.

Under the terms of the amendment to cover natural gas, the price for wet gas produced from any given field is to be the highest price that could be arrived at under the terms and conditions of any contract between the seller and buyer in effect May 1, 1942, for the sale of wet gas produced from that field.

May 1 was selected, OPA explained, because use of that date as a base period will not result in higher maximum prices than would result from use of October 1, 1941, and will not entail any increase in the price of natural gasoline.

If a seller had no contract in effect on May 1, his maximum price will be the highest price that could be charged at that time under the terms and conditions of any contract in effect May 1 between the seller and a purchaser of the same class for the sale of wet gas produced from that field.

Where a price cannot be arrived at under these methods or where the buyer wishes to extract some product from the wet gas not contemplated in the contract (such as some new product), a tentative price may be set, to be approved by OPA.

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ADVERTISING: Oil companies which may soon be asked to abandon the use of brand names so that all gasolines may conform to new formulae proposed by OPC and equipment manufacturers who are devoting resources to the war program were given assurance by the Bureau of Internal Revenue this week that expenditures for institutional and patriotic advertising will be considered ordinary and necessary expenses of doing business and will be deductible, as such, for tax purposes.

On the broad thesis that "advertising is a necessary and legitimate business expense so long as it is not carried to an unreasonable extent or does not become an attempt to avoid proper tax payments," Commissioner Guy T. Helvering laid down a broad general policy which the bureau will follow during the war period.

"The bureau," Helvering said, "realizes that it may be necessary for taxpayers now engaged in war production to maintain, through advertising, their trade names and the knowledge of the quality of their products and good will built up over past years, so that when they return to peace time production their names and the quality of their products will be known to the public.

"In determining whether such ex-

penditures are allowable, cognizance will be taken of (1) the size of the business, (2) the amount of prior advertising budgets, (3) the public patronage reasonably to be expected in the future, (4) the increased cost of the elements entering into the total of advertising expenditures, (5) the introduction of new products and added lines, and (6) buying habits necessitated by war restrictions, by priorities, and by the unavailability of many of the raw materials formerly fabricated into the advertised products.

"Reasonable expenses incurred by companies in advertising and advertising technique to speed the war effort among their own employes, and to cut down accidents and unnecessary absences and inefficiency, will be allowed as deductions. Also reasonable expenditures for advertisements including the promotion of government objectives in wartime, such as conservation, salvage or the sale of war bonds, which are signed by the advertiser, will be deductible provided they are reasonable and are not made in an attempt to avoid proper taxation."

No definite rule for determining what is reasonable in the case of expenditures for advertising can be laid down in advance so as to fit all situations and all classes of taxpayers, Helvering added, and the bureau will consider applications for individual rulings. However, he pointed out, the bureau is busy with an unusual volume of work, and it is believed the foregoing general statement of policy will fit all but the most unusual circumstances.

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TANK TRUCKS: ODT orders restricting the use of railroad tank cars for hauls of less than 200 miles were not intended to divert that traffic to tank trucks but to control rail movements of oil in order to swell the eastward movement through the substitution of large tank cars for small ones.

An explanation by Joseph B. Eastman, transportation director, last week, indicated that many distributors had immediately thrown truck fleets into the gap left by the rail order, but ODT pointed out that such transportation was expensive in both rubber and gasoline, as well as hard on trucks which are irreplaceable.

Many small tank cars have been put into operation on the shorter hauls as a result of the order, and are expected to care for the situation, but Eastman threatened, if trucks were used for distances over 100 miles, formal permit restrictions may have to be applied.

Maximum Prices Fixed on Used Oil Country Tubular Goods

MAXIMUM prices for re-usable oil country tubular goods and other iron and steel pipe were pushed back to the October 1-15, 1941, level by the Office of Price Administration October 3, bringing to an end recent high prices based on previous orders that such goods could be sold at prices up to but not exceeding those for comparable new pipe.

The definite ceiling prices contained in the new regulations are on a shipping-point basis, to permit a free flow of re-usable pipe to any point where the need is great.

Prices fixed for re-usable oil country tubular goods are 75 percent of the list price of the lowest grade of new oil country tubular goods having the same diameter and weight per foot.

Oil field goods are defined in the regulations as "re-usable oil well casing, tubing, drive pipe and drill pipe suitable, without further reconditioning, for use for a purpose for which such pipe of prime quality customarily is used. Oil-country pipe is stronger than other pipe, designed to handle the heavy pressures of oil and gas well work."

To encourage segregation and thorough reconditioning of top-grade re-usable material, premiums are provided, as follows:

"For threaded and coupled oil country tubular goods, a premium of 20 percent over shipping-point prices is permitted

Maximum Prices for Tubular Goods—Threaded and Coupled

Steel Drive Pipe

DESCRIPTION OF PIPE		PRICE PER HUNDRED FEET—DOLLARS						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
SIZE Outside Diam. (Inches)	Weight per Foot (Pounds)	Less than $0.25 freight rate per hundred pounds	$0.25 and over but less than $0.50 freight rate per hundred pounds	$0.50 and over but less than $0.75 freight rate per hundred pounds	$0.75 and over but less than $1.00 freight rate per hundred pounds	$1.00 and over but less than $1.25 freight rate per hundred pounds	$1.25 and over but less than $1.50 freight rate per hundred pounds	$1.50 and over freight rate per hundred pounds
2⅜	3.75	15.40	16.10	16.90	17.50	18.30	19.00	19.70
2⅞	5.90	21.80	22.90	24.00	25.10	26.20	27.30	28.40
3½	7.70	28.50	29.90	31.40	32.80	34.30	35.70	37.10
4	9.25	33.70	35.40	37.20	38.90	40.60	42.40	44.10
4½	11.00	40.10	42.10	44.20	46.30	48.30	50.40	52.40
5 5/16	15.00	54.20	57.00	59.80	62.70	65.50	68.30	71.10
6⅝	19.45	69.90	73.50	77.20	80.80	84.50	88.20	91.80
8⅝	25.55	98.10	102.90	107.70	112.50	117.30	122.10	129.90
8⅝	29.35	113.10	118.60	124.10	129.60	135.10	140.60	146.20
8⅝	32.40	125.10	131.10	137.20	143.30	149.40	155.40	161.50
10¾	32.75	127.30	133.40	139.60	145.70	151.90	158.00	164.20
10¾	35.75	139.90	146.60	153.30	160.00	166.70	173.40	180.20
10¾	41.85	163.10	171.00	178.80	186.70	194.50	202.40	210.20
12¾	45.45	180.80	189.30	197.80	206.40	214.90	223.40	232.00
12¾	51.15	203.20	212.80	222.40	232.00	241.60	251.20	260.80
14	57.00	269.80	280.50	291.20	301.90	312.60	323.30	334.00
16	65.30	330.40	342.70	354.90	367.20	379.40	391.60	403.90
18	81.20	442.40	457.60	472.80	488.10	503.30	518.50	533.70
20	90.00	503.10	520.00	536.80	553.70	570.60	587.50	604.30

Steel Drill Pipe

2⅜	4.80	25.00	25.90	26.80	27.70	28.60	29.50	30.40
2⅝	6.65	35.90	37.10	38.40	39.60	40.90	42.10	43.40
2⅞	6.45	34.80	36.00	37.20	38.40	39.70	40.90	42.10
2⅞	8.35	43.60	45.20	46.80	48.40	49.90	51.60	53.20
2⅞	10.40	54.60	56.50	58.50	60.40	62.40	64.30	66.30
3½	8.50	45.70	47.30	48.90	50.50	52.10	53.70	55.30
3½	11.20	60.40	62.50	64.60	66.70	68.80	70.90	73.00
3½	13.30	69.80	72.30	74.80	77.30	79.80	82.30	84.80
4½	12.75	66.20	68.60	71.00	73.40	75.80	78.20	80.60
4½	13.75	71.50	74.10	76.70	79.30	81.90	84.50	87.00
4½	16.60	86.40	89.50	92.60	95.80	98.90	102.00	105.10
5 5/16	19.00	99.10	102.70	106.30	109.80	113.40	116.90	120.50
5 5/16	22.90	117.50	121.80	126.10	130.40	134.70	139.00	143.20
5 5/16	25.25	132.40	137.20	141.90	146.60	151.40	156.10	160.90
6⅝	22.20	117.40	121.60	125.80	129.90	134.10	138.30	142.40
6⅝	31.90	166.70	172.60	178.60	184.60	190.60	196.50	202.50
7⅝	29.25	160.90	166.30	171.80	177.30	182.80	188.30	193.80
8⅝	40.00	234.20	241.70	249.20	256.70	264.20	271.70	279.20
8⅝	46.50	271.70	280.40	289.10	297.90	306.60	315.30	324.00

(e) **Extras.** (1) Whenever, at the request of the consumer, pipe is coated with asphalt; or wrapped with a protective coating; or cut to lengths of 12 feet and under; or cut to lengths of 12 feet and under and threaded; an extra charge may be made for each such service. Such charge or charges may not exceed the charge or charges that the seller customarily made for such service or services during the period August 15 to October 15, 1941.

No extra charge or charges may be made unless each such charge is listed as a separate item on the invoice.

(Prices for tubing and casing on following page)

when the following specifications are met: (1) each length of pipe must be commercially straight and free of injurious surface defects, (2) must bear the American Petroleum Institute monogram showing that such pipe was manufactured to API specifications, (3) must be of American manufacture, (4) must have been subjected to a ring and plug-gauge test as required under API specifications to assure absence of stand-off and other defects such as 'cupping' of threads and pulling strain, (5) must have threads which are free from visible breaks and galling, (6) must weigh at least 96½ percent of the calculated weights required by API specifications for new pipe of the same size and weight per foot, (7) must have been drifted with cylindrical mandrels as required in API specifications (except that the mandrel shall have an outside diameter of not less than 1/16-inch under the nominal inside diameter of the pipe being tested), (8) must have been hydrostatically tested to a minimum pressure of 1500 pounds (the pressure to be applied for not less than one minute without leakage and the ends filled with plugs, using a zinc-base thread compound), and (9) must be stamped with a steel die to show clearly the seller's identification mark.

"For plain end oil country casing and tubing meeting the applicable foregoing specifications, the seller's ceiling price is the maximum premium shipping-point price for threaded and coupled pipe of like quality, less 10 percent.

"For re-usable oil country pipe which no longer meets the high quality requirements of oil country tubular products yet fulfills specifications for pipe other than oil-country tubular goods, maximum prices are those provided for pipe other than oil-country tubular goods."

The zone in which a shipping point is located is to be determined by ascertaining the established charge in cents per hundred pounds for transporting pipe by rail, at the rate for the lowest minimum carload weight, from Lorain, Ohio, to the rail siding nearest the shipping point, and by selecting the zone applicable to such charge as shown in tables contained in the regulation.

Maximum prices for oil field material, by zones, are shown in the accompanying tables.

Maximum Prices for Tubular Goods—Threaded and Coupled

(Table continued from preceding page)

Steel Tubing—Upset or Plain

DESCRIPTION OF PIPE		PRICE PER HUNDRED FEET—DOLLARS						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
SIZE Outside Diam. (Inches)	Weight per Foot (Pounds)	Less than $0.25 freight rate[1] per hundred pounds	$0.25 and over but less than $0.50 freight rate[1] per hundred pounds	$0.50 and over but less than $0.75 freight rate[1] per hundred pounds	$0.75 and over but less than $1.00 freight rate[1] per hundred pounds	$1.00 and over but less than $1.25 freight rate[1] per hundred pounds	$1.25 and over but less than $1.50 freight rate[1] per hundred pounds	$1.50 and over freight rate[1] per hundred pounds
2⅜	4.60	17.00	17.80	18.70	19.50	20.40	21.30	22.10
2⅞	6.20	22.00	23.20	24.30	25.40	26.60	27.80	28.90
3½	9.20	31.60	33.40	35.10	36.80	38.50	40.30	42.00

Steel Casing

4½	9.50	34.30	36.10	37.90	39.70	41.40	43.20	45.00
4¾	16.00	57.80	60.80	63.80	66.80	69.80	72.80	75.80
5	13.00	48.60	51.10	53.50	55.90	58.40	60.80	63.20
5	14.00	49.80	52.50	55.10	57.70	60.30	63.00	65.60
5	15.00	53.50	56.30	59.10	61.90	64.70	67.50	70.30
5	18.00	64.90	65.20	70.80	74.20	77.60	80.90	84.30
5¼	10.00	39.60	40.70	42.60	45.20	47.10	49.00	50.90
5¼	13.00	47.50	49.90	52.30	54.80	57.20	59.60	62.08
5¼	16.00	54.40	57.30	60.30	63.30	66.30	69.30	72.30
5½	14.00	42.50	45.10	47.80	50.40	53.00	55.70	58.30
5½	15.00	44.90	47.70	48.20	53.30	56.10	58.90	61.70
5½	17.00	51.20	52.10	57.50	60.70	63.90	67.10	70.30
6⅝	13.00	51.50	53.90	56.30	58.80	61.20	63.70	66.10
6⅝	17.00	60.10	63.30	66.40	69.60	72.80	76.00	79.20
6⅝	20.00	70.90	74.60	78.40	82.10	85.90	89.60	93.30
6⅝	24.00	84.70	89.20	93.70	98.20	102.70	107.20	111.70
6⅝	26.00	90.60	95.40	100.30	105.20	110.10	114.90	119.80
7	17.00	53.30	56.40	59.60	62.80	66.00	69.20	72.40
7	18.00	56.40	59.80	63.10	66.50	69.90	73.30	76.70
7	20.00	62.40	66.60	69.90	73.60	77.40	81.10	84.90
7	22.00	68.90	73.00	77.20	81.30	85.40	89.50	93.70
7	24.00	76.60	81.10	85.60	90.10	94.60	99.10	103.60
7	26.00	82.40	87.20	92.10	97.00	101.90	106.80	111.60
7	28.00	92.60	97.80	103.10	108.30	113.60	118.80	124.10
7⅝	26.40	98.10	103.10	108.00	113.00	117.90	122.90	127.00
8	20.00	76.40	80.10	83.90	87.70	91.40	95.20	98.90
8⅝	20.00	76.50	80.10	84.00	87.70	91.50	95.20	99.00
8⅝	24.00	88.80	93.10	97.80	102.30	106.80	111.30	115.80
8⅝	28.00	95.10	100.30	105.60	110.80	116.10	121.30	126.60
8⅝	32.00	101.80	107.80	113.80	119.80	125.80	131.80	137.80
8⅝	36.00	131.30	138.00	144.80	151.50	158.30	165.00	171.80
9	34.00	143.60	150.00	156.30	162.70	169.10	175.50	181.80
9	38.00	161.20	168.30	175.40	182.56	189.70	196.80	203.90
9	40.00	169.70	177.20	184.70	192.20	199.70	207.20	214.70
9⅝	40.00	127.00	134.50	142.00	149.50	157.00	164.50	172.00
10¾	32.75	113.10	119.20	125.40	131.50	137.60	143.80	149.90
10¾	35.75	133.10	139.70	146.50	153.10	159.80	166.50	173.20
10¾	45.50	168.10	176.70	185.20	193.70	202.30	210.80	219.30
11¾	47.00	171.80	180.70	189.50	198.30	207.10	215.90	224.70
12¾	45.00	183.60	192.00	200.40	208.90	217.30	225.80	234.20
12¾	51.00	206.70	216.30	225.90	235.40	245.00	254.60	264.10
13	40.00	156.60	164.10	171.60	179.10	186.60	194.10	201.60
13	45.00	169.90	178.30	186.70	195.20	203.60	212.00	220.50
13	50.00	184.90	194.30	203.70	213.00	222.40	231.80	241.20
13⅜	48.00	206.80	215.80	224.80	233.80	242.80	251.80	260.80
13⅜	54.50	225.30	235.50	245.70	255.90	266.10	276.30	286.60
13⅜	61.00	250.10	261.50	273.00	284.40	295.80	307.30	318.70
14	50.00	227.80	237.20	246.50	255.90	265.30	274.70	284.00
16	55.00	285.00	295.30	305.60	315.90	326.20	336.50	346.90
16	65.00	333.60	345.80	358.00	370.10	382.30	394.50	406.70
16	70.00	354.40	367.50	380.70	393.80	406.90	420.00	433.20
16	75.00	376.50	390.60	404.70	418.70	432.80	446.90	460.90
18⅝	78.00	447.00	461.60	476.20	490.80	505.50	520.10	534.70
18⅝	87.50	487.10	503.50	519.90	536.30	552.70	569.10	585.50
18⅝	96.50	522.30	540.40	558.50	576.50	594.60	612.70	630.80
20	84.00	469.50	485.30	501.00	516.80	532.50	548.30	564.00
20	90.00	503.00	520.00	536.80	553.70	570.60	587.50	604.30
21½	92.50	599.90	617.30	634.60	651.90	669.30	686.60	704.00
21½	103.00	648.70	668.00	687.30	706.60	725.90	745.20	764.50
21½	114.00	669.20	717.60	738.90	760.30	781.70	803.10	824.40

[1] Established charge for transporting pipe by rail at the rate for the lowest minimum carload weight, from Lorain, Ohio, to the rail siding nearest the shipping point.

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INFLATION: Wages and salaries and common-carrier and public-utility rates are to be stabilized at their September 15 levels under the anti-inflation measure passed by Congress in an effort to prevent President Roosevelt from carrying out his threat to act personally if legislation was not enacted by October 1.

Effect of the legislation will be to freeze salaries and wages, passenger fares, freight and express rates, and gas, electricity and other utility charges.

Under the measure, the President is to issue a general order before November 1. Later, he is empowered to provide for adjustments to the extent found necessary to correct "gross inequities" or to aid in the effective prosecution of the war.

It is stipulated that no action shall be taken with respect to wages which is inconsistent with the provisions of the Fair Labor Standards Act or the National Labor Relations Act or "for the purpose of reducing the wages or salaries for any particular work below the highest wages or salaries paid therefor between January 1, 1942, and September 15, 1942."

The legislation makes it illegal for

[*Continued on page 38*]

Ten Years of Conservation Keep Conroe Wells Flowing

Without using any new or fancy conservation step—only modern conception of proper reservoir-energy control—wells still flow despite recovery of large volume of oil

By WARREN L. BAKER

THE Conroe oil field has produced one fifth of its estimated ultimate recovery since it was discovered 10 years ago, yet due to early adoption of modern conservation practices on a widespread scale the field's reservoir pressure has been husbanded to the point that some 93 per cent of the wells are still flowing naturally and only 9 producing wells have been abandoned. The reservoir pressure of the principal producing formation, which has produced 120 million barrels, or 90 per cent of the field's total to date, is but 222 pounds lower than the original, a change of only 1.85 pounds per million barrels of oil produced. Significantly, most of this energy loss occurred in the first 18 months, or before conservation was adopted to a material extent. A decrease of only 90 pounds while producing 113 million barrels, or 0.79 pounds per million barrels, has been recorded in the past 9 years; and currently its pressure is identical with that existing 4 years and 7 months ago, although over 42 million barrels of oil have been recovered from the horizon during the interval.

This remarkable record of conservation and outstanding illustration of the advantages of employing properly engineered operating practices is made more noteworthy by the fact that Conroe is the biggest of all Gulf Coast fields and also ranks high nationally. It leads Coastal fields in number of wells, producing acreage, current daily production, remaining reserves and despite its relatively short life already has produced more oil than any other field in this exceptionally rich petroleum province, which has been in the limelight almost constantly since Spindletop rose to fame in early 1901. Nationally, Conroe already ranks about thirtieth among the country's fields in cumulative recovery to date, and only three fields that have produced greater volumes are younger in age. It is due to attain a much higher national rank in time, for not only is it among the larger current producing fields but its remaining reserves exceed the estimated current proven reserves of either Illinois or Arkansas. Therefore, conservation at Conroe is not a story of a small producing, closely-held structure —but a broad-scale achievement of real significance.

Early History

George W. Strake completed the first well at Conroe on December 13, 1931, in what is now known as the Main Conroe sand. Within six months the field blossomed out as an active, sizeable and prolific producer of such proportion that for some time it played second fiddle only to the gigantic East Texas field, which was still in the midst of a drilling campaign and hot-oil production rate the like of which the world has never witnessed before or since.

Small leases and widely spread ownership, plus its size and activity, made conditions at Conroe favorable for hot-oil operations, and for a time a considerable quantity of oil was produced surreptitously.

Conroe wells also showed early tendencies to blow out due to the presence of gas in the upper portion of the Cockfield formation overlying the producing zone. The most serious of several blowouts occurred in January, 1933, when a well cratered and blew out. Ten days later an adjoining previously completed producing well cratered, and stopped producing. The original wild well was brought under control, and meanwhile the second one apparently was dead. However, on June 19, the latter started making an estimated 6500 barrels daily and flowed at about this rate until killed January 9, 1934. Something like 1,400,000 barrels of oil were produced during this time, and this drew heavily upon the producing formation in the immediate area. The owner, Harrison & Abercrombie, was unable to check the flow, and finally sold to Humble Oil & Refining Company. On November, 13, 1933, Humble started a directional relief well which proved highly successful, and thus demonstrated the feasibility of controlled-directional drilling where both deviation from vertical and the direction of drift must be exact.

Pioneer Engineering Practices

Despite these early inclinations toward hot oil and other wasteful practices, Conroe operators at the same time were showing tendencies of becoming leaders in the use of modern engineering practices. Perhaps because East Texas was in the hey-day of its extravagant waste of hot-oil and excessive drilling, both operators and the Texas Railroad Commission took much interest in preventing the recurrence of such conditions.

During 1932 several meetings of operators to consider development and production practices were held. A representative operating committee was formed, although only a small number of fields had such organizations in those days. The purpose of the committee was to promote the use of sound-engineered conservation practices in the field, and with most of the differences of opinions ironed out previous to appearing before

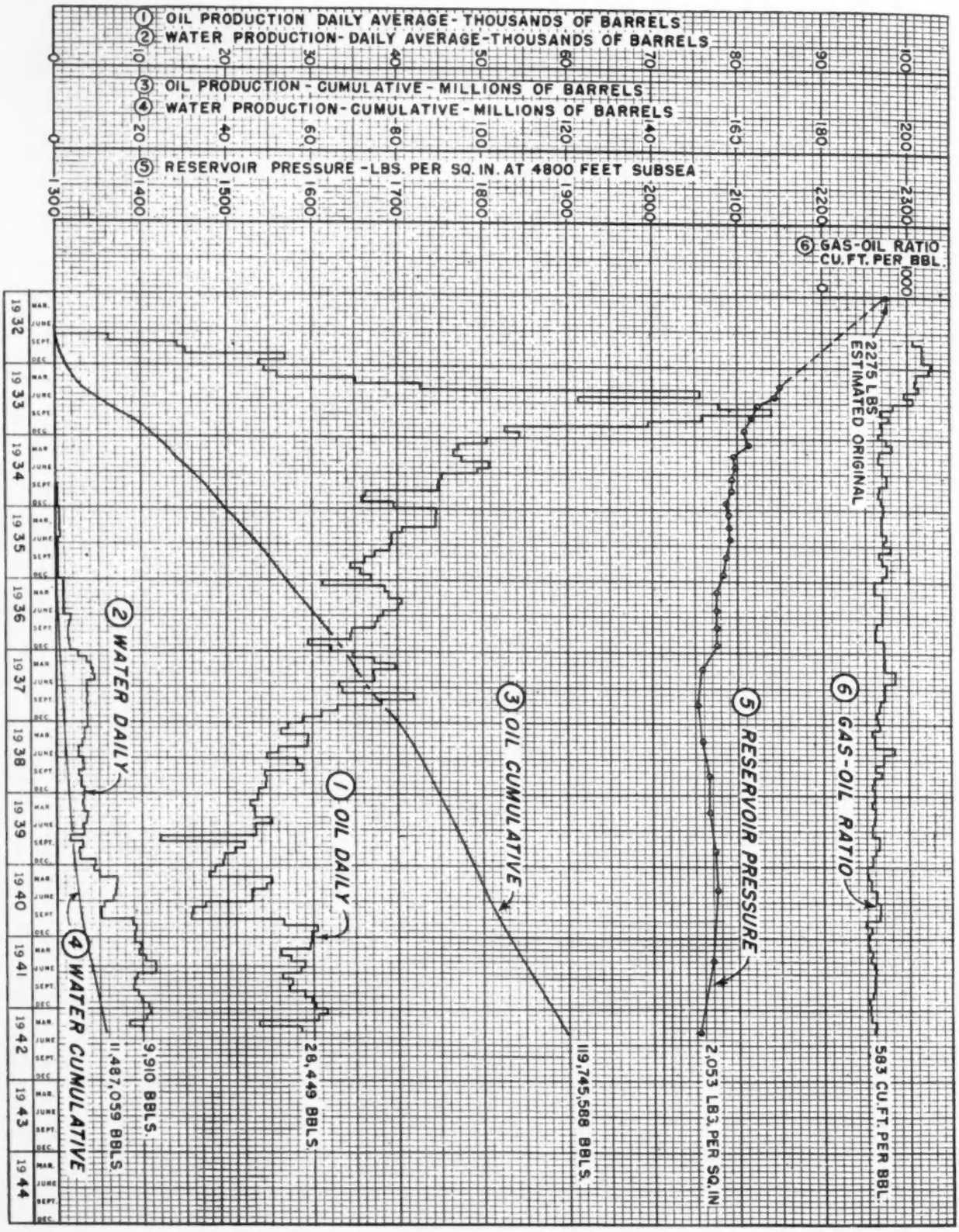

FIGURE 1
Production-pressure relationship of main Conroe sand

the commission, the latter was inclined to follow the recommendations of this group. By June of 1932, regulations governing the drilling and completion of wells had been promulgated by the commission.

On the basis that the hydrostatic pressure of the Main Conroe sand came from water low on the structure and could be controlled only by drilling not more than 1 well to 20 acres, a group of operators represented by Alexander Deussen, consulting engineer, recommended to the Texas Railroad Commission on September 16, 1932, that only 1 well be permitted to each 20 acres, that smaller tracts be unitized into units of that size, and that well production allowables grant an acreage bonus in addition to the per-well rate. The commission enacted these proposals three days later, and thus embarked upon a conservation program that was to become a standard practice for fields discovered in later years. The Conroe order marked the first time the commission had attempted unitization other than in forced pooling of town lots in city blocks in a few instances in the East Texas field, and also was one of the early examples of commission-approved wide spacing. Unlike unitization and spacing proposals for East Texas, they were never discarded at Conroe. The insertion of an acreage bonus into Conroe's allowable formula established a precedent for the field's present proration-allocation method which is based 50 percent on wells and 50 percent on acreage, and in addition also was the forerunner of the use of wells-plus-acreage as a proration formula in many other fields.

How It Was Done

Conroe's noteworthy conservation record has been attained through application of modern conceptions of proper operating practices, nothing that might be viewed as fancy or new in the light of today's knowledge has been tried. It therefore stands as a model of achievement that might be obtained in almost any field where suitable reservoir conditions exist, if operators get together and apply current engineering fundamentals of production efficiency.

The adoption of wider well spacing at Conroe naturally constituted an enormous reduction in drilling investment, and therefore conserved finances. However, wide spacing has been equally important in the proper control of bottomhole energy, and thus has been a significant factor in prolonging natural flow, which has lessened production investment and operating costs materially while aiding ultimate recovery. It goes without saying that unitization of small tracts has equalized adjacent acreage production rates and made operators satisfied to continue the wide-well-spacing program.

However, wide well spacing alone could not have achieved the conservation record established by Conroe. But together with careful completion and choking of wells to protect the overlying gas cap, and proper withdrawal rates to make effective use of natural water-drive conditions, the story of how conservation was obtained at Conroe actually is told. This has been made possible by engineering studies and wide adoption of operating procedures indicated by them as best suited to the operation of the field.

With wider well spacing and a well-plus-acreage production allowable basis as a starting point, the field's operating committee, known as Conroe Operators Association, continued in existence and steadily expanded the scope of its work. It has been a material contributing factor in the adoption of proper engineering practices, and thus to a considerable degree is responsible for the conservation attained in the field.

The Operators Association has all the major companies, most of the independents and some of the royalty owners as members. At its head is a chairman, a position filled most of the time as well as currently by Alexander Deussen, who was vice chairman when the association or committee was formed originally. An executive committee is composed of officials of various companies. Main problems that arise are handled by a standing committee of senior engineers from the personnel of the various operating firms, and at present is headed by R. E. Bridges, of Humble Oil & Refining Company. Most of the work, however, falls to a committee of field engineers, of which C. C. Johnson, Standard Oil Company of Kansas, is the present head. This committee meets once a month. The association hires a full-time field or resident engineer, a position currently filled by L. D. Webster.

TABLE 1

Reservoir Pressure Statistics on Main Conroe Sand

DATE	Pressure at 4800 Ft. Subsea—Lbs. Per Sq. In.			Change Per Million Bbls. Oil Produced		Oil Production—Barrels		
	Area Weighted Average	Change During Period	Change Total To Date	During Period	Total To Date	Production For Period Daily Average	Production For Period Total	Cumulative To Date
Original	2275							
June 1, 1933	2143	—132	—132	—14.86	—14.86	24,551	8,887,531	8,887,531
June 6, 1934	2098	— 45	—177	— 2.01	— 5.70	59,960	22,185,101	31,072,632
June 1, 1935	2091	— 7	—184	— 0.46	— 3.98	42,222	15,199,897	46,272,529
June 1, 1936	2074	— 17	—201	— 1.24	— 3.36	37,337	13,628,186	59,900,715
April 1, 1937	2058	— 16	—217	— 1.47	— 3.07	35,643	10,835,366	70,736,081
April 1, 1938	2058	None	—217	None	— 2.62	32,998	12,044,278	82,780,359
April 1, 1939	2066	+ 8	—209	+ 0.86	— 2.27	25,330	9,245,383	92,025,742
May 1, 1940	2073	+ 7	—202	+ 0.83	— 2.03	21,176	8,385,653	100,411,395
May 1, 1941	2070	— 3	—205	— 0.33	— 1.87	24,520	8,949,649	109,361,044
May 1, 1942	2053	— 17	—222	— 1.64	— 1.85	28,451	10,384,544	119,745,588

Reservoir Pressure Conserved

This discussion of conservation at Conroe might properly be confined to the Main Conroe sand, the field's principal horizon that accounts for 90 percent of the cumulative oil production, 76 percent of the gas produced, 83 percent of the wells and 81 percent of the acreage. It also is the zone in which the best conservation results have been attained, the reservoir energy of this horizon having declined only 222 pounds in the 10 years and 5 months following its first production, or but 1.85 pounds per square inch per million barrels of oil produced. As a result, 766 or 97 percent of the wells producing from the Main Conroe sand are still flowing naturally.

This record of reservoir-energy conservation becomes much more impressive when one notes (see Table 1) that a greater decline was recorded in the first year and a half than in the following nine years. This was before efficient production practices were being employed in the field, and considerable waste of gas from the overlying gas cap was occurring in contrast with negligible amounts in succeeding years. Of the 222 pounds decline in pressure from the Main Conroe sand original level of 2275 pounds that has occurred, 132 pounds took place in the first 18 months when 8,887,531 barrels of oil were produced, while only a 90-pound decrease has taken place in the following 8 years and 11 months when production has totaled 113,846,362 barrels. Therefore, in contrast with a pressure drop that averaged 14.86 pounds per million barrels of oil produced during the first 1½ years, employment of efficient engineering practices has reduced the rate of loss to 0.79 pounds per million barrels of oil recovered during the past almost 9 years, although the annual average production rate and number of wells has doubled.

Daily average oil production from the Main Conroe sand had reached

25,000 barrels by the end of 1932 or one year after its discovery, and attained a peak of 84,000 barrels per day during August, 1933, although prorated output had been in vogue since September of 1932. During this time (December, 1931, to August, 1933) reservoir pressure declined approximately 150 pounds per square inch in producing 15,000,000 barrels of oil. Thereafter, more drastic curtailment and advanced conservation practices have been in force and the pressure rate of decrease has shown marked improvement, as shown in Figure 1. With daily production averaging slightly more than 40,000 barrels per day, a normal rate of pressure decline took place during 1934, 1935 and 1936, a loss of 37 pounds being recorded while recovering 47,824,739 barrels of oil.

The present reservoir pressure (May 1, 1942) of 2053 pounds per square inch is only 5 pounds less than that of April 1, 1937, and is identically the same as on October 1, 1937. During this latter period of 4 years and 7 months when 42 million barrels have been produced, Conroe Main sand production has been curtailed below 30,000 barrels daily except for four different months and once back to 12,500 barrels per day. While curtailed to levels of less than 30,000 barrels the horizon's pressure has registered slight gains, except for the loss of 20 pounds during the past two years.

The area weighted average reservoir pressure of 2053 pounds in the Main Conroe sand on May 1, 1942, compared with 2070 pounds per square inch a year previous. This decline of 17 pounds in reservoir pressure, amounted to a loss of 1.64 pounds per million barrels of oil produced during the year. Compared to the preceding year (from May 1, 1940, to May 1, 1941) the average daily rates of oil, water and gas production increased in the past year. Oil production rate was up 16 percent (3932 barrels per day), water production rate had increased 26 percent (2079 barrels daily), and gas production was up 18 percent (2408 M. C. F. per day).

The cumulative production of the Conroe field as of May 1, 1942, was 132,335,059 barrels of oil, or one fifth of its estimated ultimate recovery during its first 10 years. The Main Conroe sand had a cumulative production of 119,745,588 barrels, or 90½ percent of the field's total, while the Upper Cockfield sand had produced 12,589,471 barrels of oil.

Daily average production per well for the field was 33.9 barrels in April, 1942, compared to 34.1 barrels for 1941, 27.0 barrels for 1940 and 1939, and 32.9 barrels for 1938.

Recovery for the field to May 1 was 7394 barrels per acre, 3792 barrels for the Upper Cockfield and 8215 barrels for the Main Conroe sand. The average recovery per well was 142,143 barrels for the field, 88,038 barrels for the Upper Cockfield and 151,961 barrels for the Main Conroe wells.

TABLE 2

Gas-Oil Ratios of Main Conroe Sand and Field (Weighted Average)

Year—Month	MAIN CONROE		FIELD (Weighted Average)	
	No. of Wells	Ratio Cu. Ft./ Bbl.	No. of Wells	Ratio Cu. Ft./ Bbl.
1937 Average	791	715	946	833
1938 Average	780	640	946	881
1939 Average	773	588	942	795
1940 Average	785	564	938	757
1941 January	789	496	936	652
February	789	521	936	666
March	790	564	935	840
April	791	541	936	818
May	791	577	937	798
June	791	597	937	788
July	791	592	937	788
August	789	591	933	790
September	789	589	931	799
October	788	557	929	776
November	788	525	929	714
December	787	535	930	755
Average	789	556	934	764
1942 January	787	535	933	762
February	788	545	933	783
March	788	601	932	844
April	788	583	931	834

Gas-Oil Ratios

The gas-oil ratio for the Main Conroe sand has remained at a constant minimum, as shown in Table 2. Cumulative production figures show an overall gas-oil ratio as of May 1, 1942, of 729 cubic feet per barrels for the Main Conroe sand in contrast with a field average of 823 cubic feet per barrel. For the Main Conroe sand the gas-oil ratio was 583 cubic feet per barrel in April, 1942, compared with an average of 556 cubic feet per barrel in 1941 and 564 cubic feet per barrel in 1940. These figures approximate the dissolved gas-oil ratio for this formation.

Only 28 Main Conroe-sand wells on March 1, 1942, had gas-oil ratios in excess of 1000 cubic feet per barrel, and but 6 exceeded 2000 cubic feet per barrel. Not a single Main Conroe-sand well has been reworked during the past 2 years for excessive gas-oil ratios.

Cumulative gas production from both oil and gas wells was 114,109,848 M. C. F. as of May 1, 1942. Of this amount 108,858,497 M. C. F. or 95.4 percent had been produced from oil wells while the remaining 5,251,351 M. C. F. was produced from gas wells. The Upper Cockfield oil wells had produced 21,521,024 M. C. F. of gas, or 19.7 percent of the total oil well gas, and the Main Conroe oil wells had a cumulative gas production of 87,337,473 M. C. F. During April, 1942, a total of 13 wells were producing gas only and were accounting for 22 percent of the total gas being produced in the field.

Two gasoline plants are connected to 880 wells, including 875 oil wells and 5 gas wells. They processed 88 percent of the oil well gas during the first quarter of 1942.

Well Status

A total of 1037 wells have been drilled in the Conroe field area, of which 965 were oil wells, 14 originally were completed as gas wells, and 58 were dry holes. Of the 965 wells initially completed as oil wells, 931 were still producing oil on May 1 this year, 25 were shut in due to no production or for reclassification as gas wells, while 9 wells had been abandoned.

No wells have been drilled in the field proper during the past two years. However, 6 wells were drilled just north of the field at distances ranging from ½ to 1 mile from the nearest producing well. Two of these wells were completed as oil wells while the remaining four proved dry.

Of the 931 wells still producing oil, 867 or 93 percent were still flowing

TABLE 3

Pertinent Data on Conroe Field

(Figures as of May 1, 1942, unless otherwise indicated)

	Total Field	Main Conroe Sand
Oil Production:		
Cumulative	132,335,059	119,745,588
Daily (April, 1942)	31,515	28,449
Cumulative per Acre (Avg.)	7,394	8,215
Cumulative per Well (Avg.)	142,143	151,961
Estimated Ultimate Recovery	640,000,000	.....
Estimated Remaining Reserves	508,000,000	.....
Gas Production (M.C.F.):		
Cumulative from Oil and Gas Wells	114,109,848	.....
Cumulative from Oil Wells	108,858,497	87,337,473
Cumulative from Gas Wells	5,251,351	.....
Monthly (April) from Oil Wells	788,339	497,565
Monthly (April) from Gas Wells	222,998	.....
Water Production:		
Cumulative	18,680,213	11,487,059
Daily (April, 1942)	12,741	9,910
Percent of Total Fluid Production (April, 1942)	28.8	25.8
Number Water Wells (April, 1942)	310 (33.3%)	242 (30.7%)
Producing Acres	17,897	14,577
Well Status:		
Number Oil Wells	931	788
Number Gas Wells	13	1
Oil Wells Shut In or Reclassified as Gas Wells	25	.....
Oil Wells Abandoned	9	.....
Number Oil Wells Flowing	867 (93%)	766 (97%)
Number Oil Wells on Gas Lift	41 (5%)	8 (1%)
Number Oil Wells Pumping	23 (2%)	14 (2%)
Reservoir Pressure (Lbs.):		
As of May 1, 1942	.....	2,053
As of May 1, 1941	.....	2,070
Pressure Change per Million Barrels Produced above Period	.....	1.64
Decline During Past Year	.....	17
Decline from Original	.....	222
Gas-Oil Ratios	834	583

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naturally, 41 (5 percent) were on gas lift and 23 (2 percent) were on the pump. The majority of the wells dependent on artificial lift were in the Upper Cockfield formation, where 101 (71 percent) of the 143 wells were flowing, 33 (23 percent) were on gas lift and 9 (6 percent) were pumping. In the Main Conroe sand, 766 (97 percent) were still flowing, 8 (1 percent) were on gas lift and 14 (2 percent) on the pump.

However, some of the wells still flowing naturally had been equipped with lift equipment, 92 were in this category. Artificial lift installations increased from 102 to 163 wells during the past two years. On May 1, 156 active wells or about 17 percent of the oil wells were equipped for artificial lifts. This included 62 wells or 43 percent of the 143 producing Upper Cockfield wells but only 94 wells or 12 percent of the 788 producing Main Conroe wells.

Small tubing installations, generally in conjunction with several flow valves or perforated collars, accounted for two thirds of the present artificial lift. The remaining one third was about equally divided between pumping equipment and either continuous or intermitting types of flow valves.

During March, 1942, it is estimated that gas lift production was 24,066 barrels of oil requiring 106,478,000 cubic feet of gas, or an average input gas-oil ratio of 4400 cubic feet per barrel.

Water Situation

There has been a 20-percent increase in the number of wells producing water and a 40-percent increase in the rate of water production during the past two years. Apparently, the 15-percent increase in oil production was largely responsible for the increased salt water production.

During the 12 months ended May 1, 1942, water production averaged 29 percent of the total fluid production or approximately 13,000 barrels daily. The number of wells producing water was 310 compared with 257 two years ago.

However, the relationship between water and oil production had changed very little. The Upper Cockfield sand was producing about 3000 barrels of water per day, which was 48 percent of the combined daily oil and water production of the sand compared to an average of 48.7 percent in 1941 and 43.4 percent in 1940. The Main Conroe sand was producing 10,000 barrels of water daily or 25.8 percent of the fluid it produced, compared with 26 percent during 1941 and 23.0 percent during 1940.

Total water production to May 1, 1942, was 18,628,213 barrels or 12 percent of the cumulative oil and water production from the field. The Upper Cockfield sand had produced 7,193,154 barrels, which was 36 percent of the sand's total oil and water recovery, while the Main Conroe sand had produced 11,487,059 barrels of water, or 9 percent of the total oil and water produced from this formation. Eight percent of the water wells, producing from 80 to 100 percent water, accounted for 46 percent of the total water production.

A total of 17 wells were worked over to reduce salt water in the 2-year period ending May 1, 1942. Two of these workovers were on the Upper Cockfield wells and resulted in a gas well and an unsuccessful job. Of the remaining 15 jobs performed on Main Conroe wells, 9 obtained a water shutoff, 5 were not considered successful, and 1 job resulted in abandonment of the well.

In all except one instance the squeeze-cement method was used in plugging off salt water. As generally practiced in the Conroe field this method consists of the following steps without pulling screen and liner: (1) The screen is perforated at a point opposite or immediately above the probable water-saturated section; (2) A retrievable cement retainer is set in the casing with a drillable tail pipe extending downward into the blank liner so that cement can be washed out of the blank liner after the squeeze job; (3) Cement (75 to 150 sacks) at a maximum pressure of 3000 pounds per square inch is then squeezed into the formation with probably all or most of it entering the formation at the perforated screen point; (4) After setting, the cement is drilled out to the desired plug-back depth and the screen is perforated for completion.

The practice of gathering produced salt water in lease pits where it either evaporates or is turned into natural drainage channels during rainy seasons is the common disposal system at Conroe. During the past 2 years a number of new earthen storage pits were built or old ones enlarged due to the increase in water production.

There also has been some recent activity toward use of disposal wells for the subsurface injection of salt water. The disposal of salt water by this means is still in its initial stages, but appears successful and additional installations are likely.

The first salt-water-disposal well in the Conroe field was completed in March, 1941, near the west edge of the field. It was drilled to 3740 feet and completed through 5-inch casing in a sand section from 3195-3260 feet. After running screen and a string of 2½-inch tubing with packer on bottom, salt-water injection was initiated at a rate of approximately 600 pounds per day with 300 pounds surface pressure. Due to the well sanding up twice, a string of 1¼-inch tubing was run so the well could be backwashed inside the 2½-inch tubing. A total of 150 to 300 barrels daily was disposed of in this manner with the salt water picked up from an open pit and injected by means of a power-driven duplex pump. In September, 1941, the string of 1¼-inch tubing was removed from the well which resulted in the injection pressure decreasing about 100 pounds to between 450 and 500 pounds while injecting water at the same rate. In April this year the injection pressure had increased to 800 pounds for the same rate of injection, so the screen was pulled and a considerable quantity of sand swabbed. The well then commenced syphoning 150 to 200 barrels of salt water daily compared to 800 pounds injection pressure required for a 1200-barrel daily rate prior to the cleanout job. Somewhere between 50,000 and 75,000 barrels of water were disposed of in this well during the year it has been in operation.

The second salt-water-disposal well was completed in January, 1942, near the center of the field. The well was drilled to 3840 feet and several sand sections were located in the interval between 3000 and 3170 feet and between 3600 and 3735 feet. Injection into the well began in June, 1942. Water will gravitate into the well at the rate of 250 barrels daily and can be pumped at the rate of 2000 barrels daily with only 80 pounds pressure. The present rate of disposal is 1200 to 1500 barrels daily.

Another injection well has been completed by perforating an abandoned oil well on the southwest edge of the field, which on test showed a capacity of 120 barrels per hour with 300 pounds pressure.

Since Conroe, along with some 60 or 70 other Texas fields, produces a crude oil particularly suited for the manufacture of products needed for the war, it is allowed a larger number of producing days per month at present than the majority of fields in the state. The daily average field allowable per calendar day has been affected by changes in the number of producing days allowed each month. In 1940 the average was 25,275 barrels (26.9 barrels per well) with an average of 24.5 producing days per month compared to 32,376 barrels (34.6 barrels per well) with 21.1 average producing days per month in 1941 and so far in 1942. Thus, the control of gas and water energy at Conroe not only has prolonged flowing life and thereby reduced operating costs, but at present is enabling the field to contribute materially to the war effort without undue waste or gain in operating expenses.

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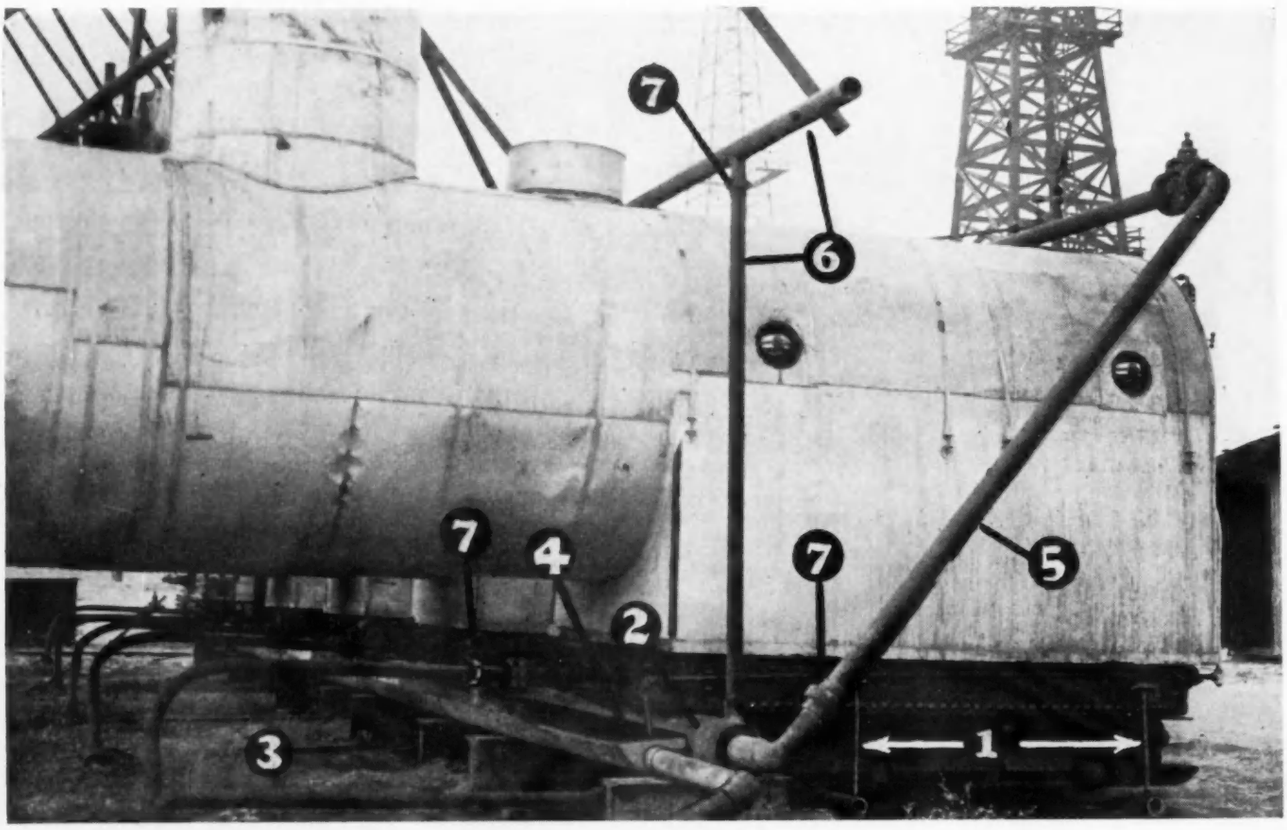
Unique Boiler Setting Carries Own Foundations

By JOHN C. ALBRIGHT

AN INSTALLATION of drilling boilers now in use in California has been designed so that the amount of labor and time required for either setting-up or dismantling has been reduced materially, and so only the minimum amount of equipment necessary for efficient operation and convenience of the operator is used. In addition to carrying its own foundations, thereby saving foundation time and reducing the non-salvageable material remaining when moved to a new location, all fittings and connection of the battery are equipped with unions so that dismantling and erection can be accomplished quickly with little effort and without requiring heavy wrenches. Naturally, the expense of boiler installation has been reduced by these features.

Five conventional oil-field boilers make up the battery, one of which is used as a spare. Gas is employed for fuel. The burners are grouped in a compartment attached below the boiler firebox by means of staybolts which pass through lugs welded to the outside of the side sheets and through holes made in a short joint of pipe attached to the bottom at each end of the burner attachment. These four bolts, one at each corner, have proved sufficient to retain the burner assembly in place, which means that only four nuts need be removed for disconnecting to either service or move the burner compartment to another location.

The front, or smokebox, end of each boiler is supported by a single vertical post, cut from large casing to the required length and having the top ends shaped as a saddle to conform to the shell of the boiler at the point of contact. The lower end of this pipe support is cut straight across, and is welded to a large rectangular sheet of boiler plate which in turn is placed on a mat of planking instead of concrete foundation. This method is less expensive than a more elaborate setting, and has been found equally serviceable. An additional



General view of boiler firebox end showing: (1) how burner assembly is attached with single bolts at each corner that pass through lug welded on outside of side sheets and top and through holes in short section of pipe at bottom; (2) use of pipe-type feedwater preheater as supporting sill; (3) channel iron piers that support preheater sill; (4) drainage flume made from half section of pipe cut lengthwise; (5) water line passing from preheater over back of boilers to feedwater controls; (6) smoke stack supports, consisting of vertical posts rising from preheater to horizontal pipe across top of boilers to which are anchored smoke stack supports; and (7) frequent use of quick acting unions that permit dismantling of all piping without requiring heavy wrenches.

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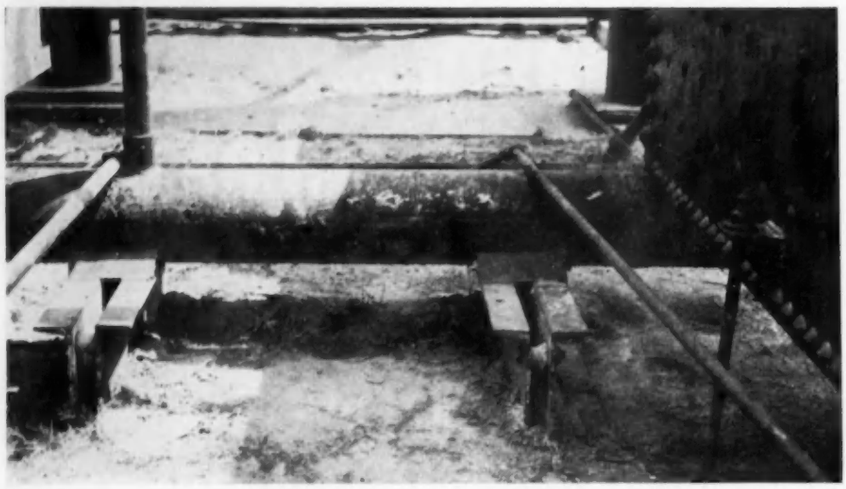
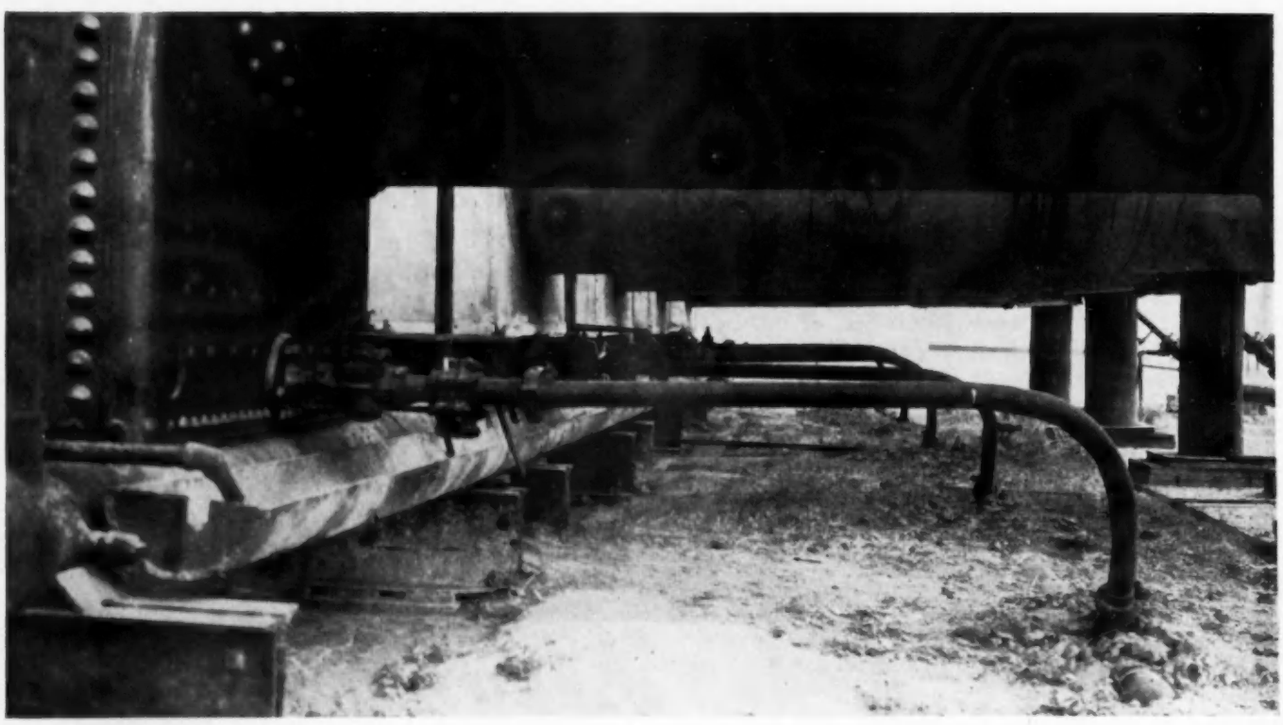


Piers made of two sections of wide channel iron connected together with bolts and spools as spacers support the pipe that serves as combination boiler foundation and preheater. Lug and bolt connection that holds burner assembly in position appears at right.

feature is that the area around the well is left free of concrete and other permanent fittings when the boiler is moved to a new location. The mats are usually made of common pine 2x12's, cut to the necessary length for adequate footing and laid in two or more layers by crossing the grain to provide greater stability and strength.

The rear support, that beneath the firebox section of each boiler, like the front end, does not employ a concrete foundation. After smoothing the ground, properly spaced and sized mats of 2x12 pine planking similar to that used on the front end of the boiler are placed in position. Horizontally atop each wooden mat are put piers made of two sections of wide channel iron put back-to-back, separated by spools and tied in position with machine bolts. A sufficient number of these piers are placed a few feet apart to extend the full width of the five boiler units. Several joints of 8-inch pipe, welded together to form a single piece long enough to extend horizontally the full width of the space occupied by the five boilers, is then placed crosswise these piers. The boiler rests directly upon this 8-inch pipe, which serves the double purpose of a supporting sill and a boiler-feed-water preheater. Retainers for the sill, welded to the channel-iron piers, are made of short pieces of 2-inch angle iron. The angle is laid down and tacked with an arc-welding machine, the saddle thus formed preventing angular and lateral movement of the combination supporting sill and preheater. When moving, the sill is cut at one point with an acetylene torch.

The supporting sill becomes a preheater by being equipped with a smaller internal line through which the feed water flows from the pumps to the control instruments. The end next to the feed pumps is welded through a flat head closing the 8-inch, and is reduced from 4 inches near the head to 3 inches with a conventional swedge nipple. A single-bolt union permits the connection and breaking out of the smaller line without requiring a heavy pipe wrench and back-ups. The opposite end of the inside 4-inch line is packed off from the 8-inch pipe with a 4-bolt stuffing box, which connects to the 8-inch where a narrow rim is welded to supply the female part of the stuffing box.



The front, or smokebox, end of the boilers are supported by a vertical post (extreme right) made from large diameter pipe, the top part of which is shaped as a saddle to fit the shell of the boiler, while the lower end is welded to large rectangular sheet of boiler plate and rests on wooden planking. Blowdown lines, with quick action unions for speed in rigging up and tearing down, lead to single header extending to disposal pit. Also visible is half of 10-inch pipe that serves as waste water flume, the channel iron piers that support this flume and the firebox combination support sill and feedwater preheater pipe.

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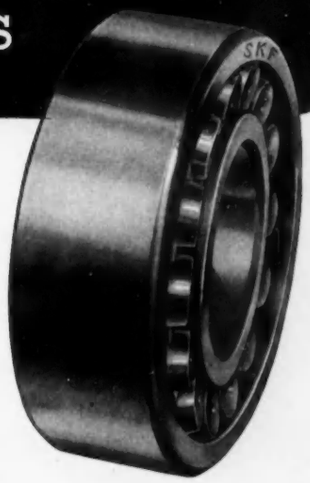
SKF
BALL AND ROLLER BEARINGS

51 SKF's *for* DRILLING *more than* 2 MILES *deep*



Putting 51 SKF Bearings to work on this giant Ideal Type 125 Consolidated Rig, designed for drilling to a depth of 12,500 feet, was a wise move on the part of The National Supply Company. For SKF's can take the heavy pounding loads imposed day after day by machines meeting War requirements . . . lose no time by needing adjustments . . . save material by eliminating the need for replacements. Every minute earned is a minute saved in the War of Production. 5133

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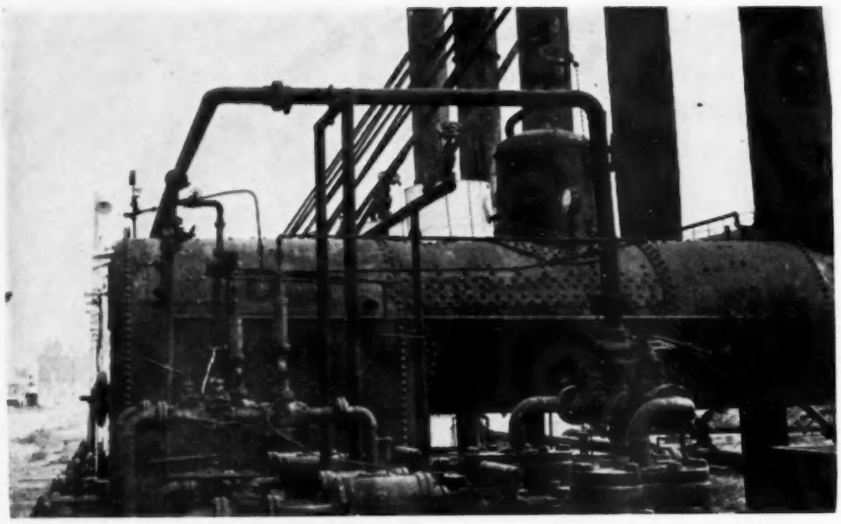


Discharge from boiler-feedwater pumps running overhead to control valves where it may be used with feedwater direct to level controllers, or directed down and through feedwater heater thence to farther side of battery and by way of overhead line be led to controls.

The packing device is attached to the combination set of lines to permit expansion of the internal line without buckling if the outer line is lower in temperature, and to take care of the reverse when steam flows through the heater when cold water is in the feed line.

Just outside the packing attachment, the 4-inch is again reduced to 3-inch with a swedge nipple followed with a welded ell and a single-bolt union so that the unit can be torn down in sections when the boilers are to be moved. The 3-inch extends upward beside the boiler at an angle of about 45° to a point near the seam of the boiler, where a line is laid the full length of the battery from the connection to the original feed-pump discharge at the other end of the boiler battery. A lubricated-plug valve is inserted in the horizontal section of the feed water line near the welded ell following the angular riser to cut out the water flowing through the heated section of the feed line. A similar plug valve is placed in the vertical riser in the feed line near the pumps for control of the feed water under certain conditions. For example, if the water is to be passed through the feed-water heater, the plug valve near the pumps is opened for water to flow to the heater, thence through the angular riser to the header and to the feed-control instruments. If the water is to be by-passed from the feed-water heater, the plug valve on the feed line farthest from the pump is closed, and the one on the riser next to the pump is closed also, which directs the water to the feed-water controllers through a straight line.

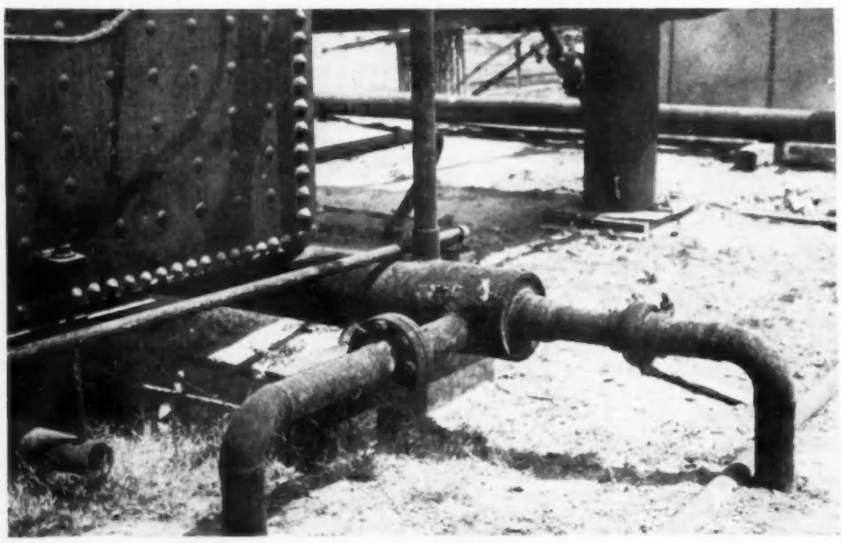
The boilers are set high enough on the front end post and at the rear sill to elevate the units so that the fireman can operate the blow-down valves easily and without passing across several pipe lines beside and below the boilers. The blow-down lines are equipped with lubricated-plug valves next to the blow-down outlet followed by a quick-opening wedge valve. These fittings are all screwed connections, but a single-bolt union is inserted in the line close up to the wedge valve so that only a short string of fittings remain attached to the boiler when the blow-down line is disconnected. The blow-down header usually is laid in a shallow trench to lower it below walks and lease roads. Connections on this header are all placed at an angle to permit the blow-down water and sludge to enter with least resistance and turbulence, and the waste is led to a sump far enough from the battery so that water and steam will not interfere with normal operation.

A drain flume is placed under the mud-ring hand-hole plates so that all waste drained from the boilers will be conducted to the sump without causing mud puddles around the equipment. The flume is set on the boiler supporting piers and retained with simple wedges to prevent slipping away from the hand-hole openings while water and scale are being removed from the boiler being cleaned.

Collars welded at appropriate intervals to the 8-inch boiler sill provide connections for the risers extending to the level of the top of the boilers so that a horizontal pipe can be attached as an anchor for the smoke stacks. All fittings and connections are supplied with unions so that dismantling and erection can be done with little effort and without requiring heavy wrenches.

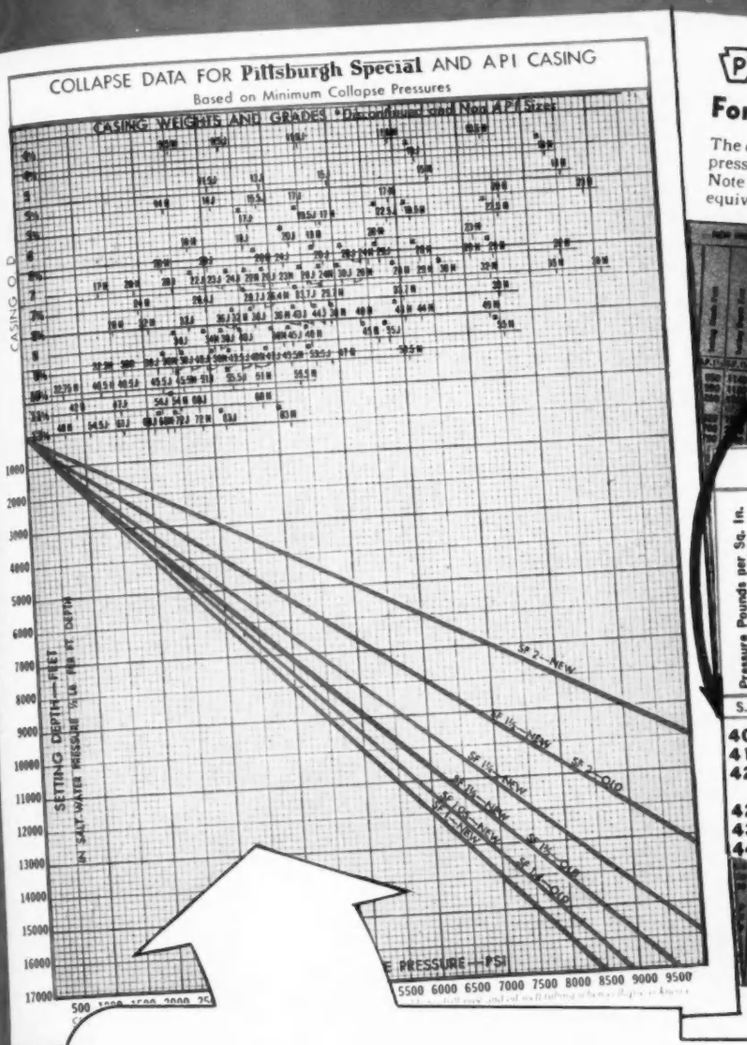
Pumps are set on a unitized base with all necessary piping permanently connected so that the water supply, steam for power and the exhaust and discharge lines can be made up by using each section in its individual place. The heat for the boiler-feed water is the exhaust from the feed pumps, plus any required from the rig engines which can be conveniently piped to the boilers.

The expense of this type boiler equipment is obviously less than many other types, and the quantity of material remaining at the setting after the boilers have been moved is almost negligible.



Connection at boiler supporting feedwater header, which contains a four-inch line inside an eight-inch one. Steam, exhaust or live, passes through eight-inch and water is pumped through four-inch.

NEW... THE CHART EVERY OPERATING MAN NEEDS!


COLLAPSE DATA FOR Pittsburgh Special AND API CASING
Based on Minimum Collapse Pressures
CASING WEIGHTS AND GRADES • Pittsburgh and Non API Sizes
CASING O.D.
SETTING DEPTH—FEET
IN SALT WATER PRESSURE 'A LB. PER FT. DEPTH
PRESSURE—PSI
5500 6000 6500 7000 7500 8000 8500 9000 9500
Sz 2—NEW
Sz 1½—NEW
Sz 1½—OLD
Sz 1¼—NEW
Sz 1¼—OLD
Sz 1—NEW
Sz 1—OLD

COLLAPSE DATA
For PITTSBURGH SPECIAL and API CASING

The chart on the reverse side is based upon the "New Minimums" figures for collapse pressures and equivalent setting depths for various safety factors as tabulated below. Note comparisons with "Old Averages" figures for collapse pressures and related equivalent setting depths. Computed for salt water pressures at .5 lb. per foot depth.

NEW MINIMUMS					OLD AVERAGES					
Pressure Pounds per Sq. In. or Setting Depth in Ft.	Setting Depth Feet	Setting Depth Feet	*Setting Depth Feet*	Setting Depth Feet	Pounds per Sq. In. or Setting Depth Ft. S.F. 2 (Same as New Min. Setting Depth Feet S.F. 1½)	*Setting Depth Ft. S.F. 1¼ (Same as New Min. Setting Depth Ft. S.F. 1.125)*	Setting Depth Ft. S.F. 1.4 (Same as New Min. Setting Depth in Ft. 1.05)	S.F. 1.3 Setting	Setting Depth Ft. S.F. 1.2 (Same as New Min. Setting Depth Ft. S.F. .9)	Setting Depth in Ft. S.F. 1.1 (Same as New Min. Setting Depth in Ft. S.F. .825)
S.F. 2	S.F. 1½	S.F. 1¼	*S.F. 1⅛*	S.F. 1						
4010	5350	6420	*7130*	8020	5350	*7130*	7640	8230	8910	9720
4190	5590	6700	*7450*	8380	5590	*7450*	7980	8590	9310	10160
4250	5670	6800	*7560*	8500	5670	*7560*	8100	8720	9450	10310
4280	5710	6850	*7610*	8560	5710	*7610*	8150	8780	9510	10380
4300	5730	6880	*7640*	8600	5730	*7640*	8190	8820	9550	10420
4420	5890	7070	*7860*	8840	5890	*7860*	8420	9060	9820	10710

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1. New *minimum* collapse values and comparisons with old *average* values.
2. Required casing weights, sizes, grades.
3. Required collapse values.
4. Equivalent setting depths at various safety factors.
5. Safety factors afforded, etc.

Basing calculations on new A.P.I. Minimum Collapse Pressures, *Pittsburgh* engineers have painstakingly worked out on a *single* graph-chart much of the data that producing industry engineers and purchasing personnel need to figure their Casing, Drill Pipe and Tubing requirements.

At a glance this chart shows the relationship between collapse values, safety factors and equivalent setting depths. With any *two* of these factors known, the *third* may be readily determined; or from any *one* known factor, possible combinations in the variation of the other *two* may be quickly explored.

Key operating men will find this *Pittsburgh* contribution a practical, accurate, time-saving aid—all the more valuable today because of critical supply difficulties. Your request for copies of this valuable chart will be promptly handled.

PITTSBURGH STEEL CO., 1656 Grant Bldg., Pittsburgh, Pa.

Pittsburgh Special and API CASING

Ingenious System for Starting Central Power Engines

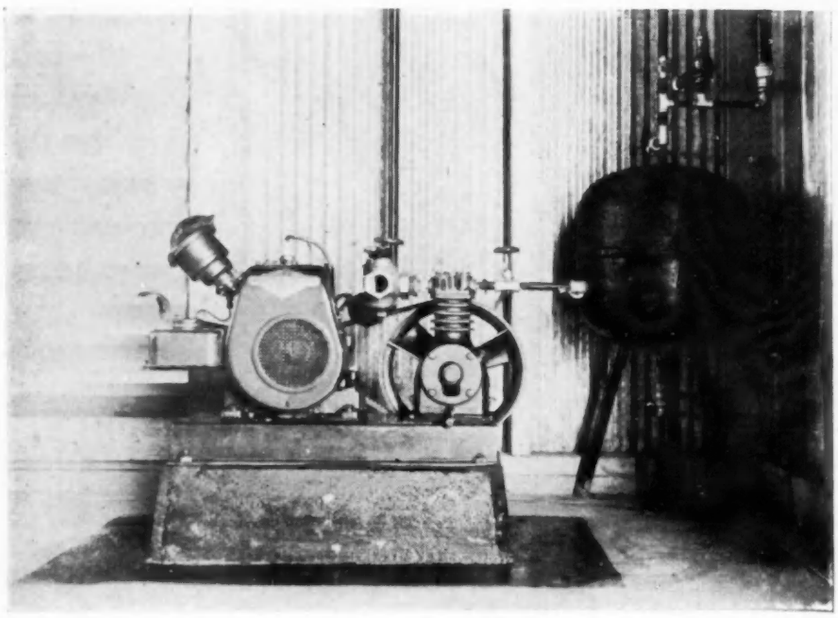
By ELTON STERRETT, Staff Writer

STARTING of engines used to drive central powers is one of the heaviest chores around the production unit using this method of operating pump jacks, and usually requires the work of more than one man if the units are to be started effectively and safely. An alternative to the second man is the installation of an air compressor with storage capacity enough to insure that the engines are rolling at proper speed to take the spark and operate properly when the air is switched off and the gas cock opened.

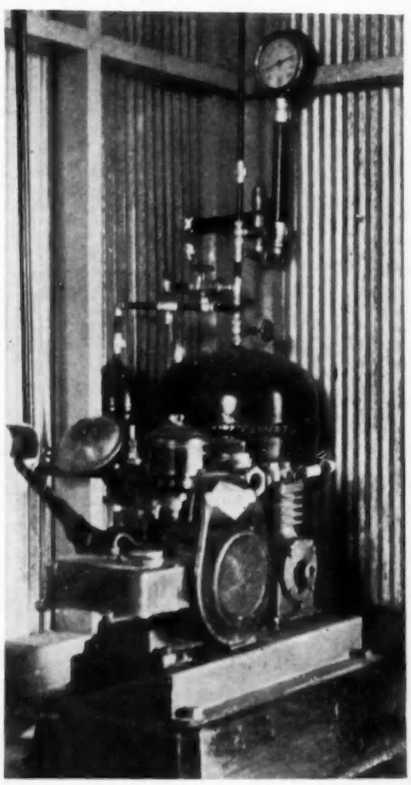
An ingenious method of kicking off the two-cylinder two-cycle 100- and 150-horsepower engines used by one company for actuating its powers was developed to replace the former method of "cranking" the unit by revolving it under manual power—applied by climbing the spokes of the flywheel until a charge of fuel has been drawn into the engine, then carefully compressed to a setting in the operating cycle as close to the firing point as can be judged, after which the ignition is snapped on or the magneto breaker flipped to fire the compressed charge. Due to the limited arc of flywheel rotation in which ignition occurs with normal timing, this operation generally is unsatisfactory as well as hazardous, and requires close coordination between the man rocking the engine and the one manipulating the spark.

The plan as adopted involves the use of a compressor unit, but instead of a storage tank large enough to furnish several fillings of the engine cylinder, a small or garage type compressor is used, belt driven by a ½-horsepower gasoline engine. This entire unit costs less than the storage tank sometimes provided for high-pressure air starting, occupies but a small corner of the engine house, and can be started readily and operated by one man.

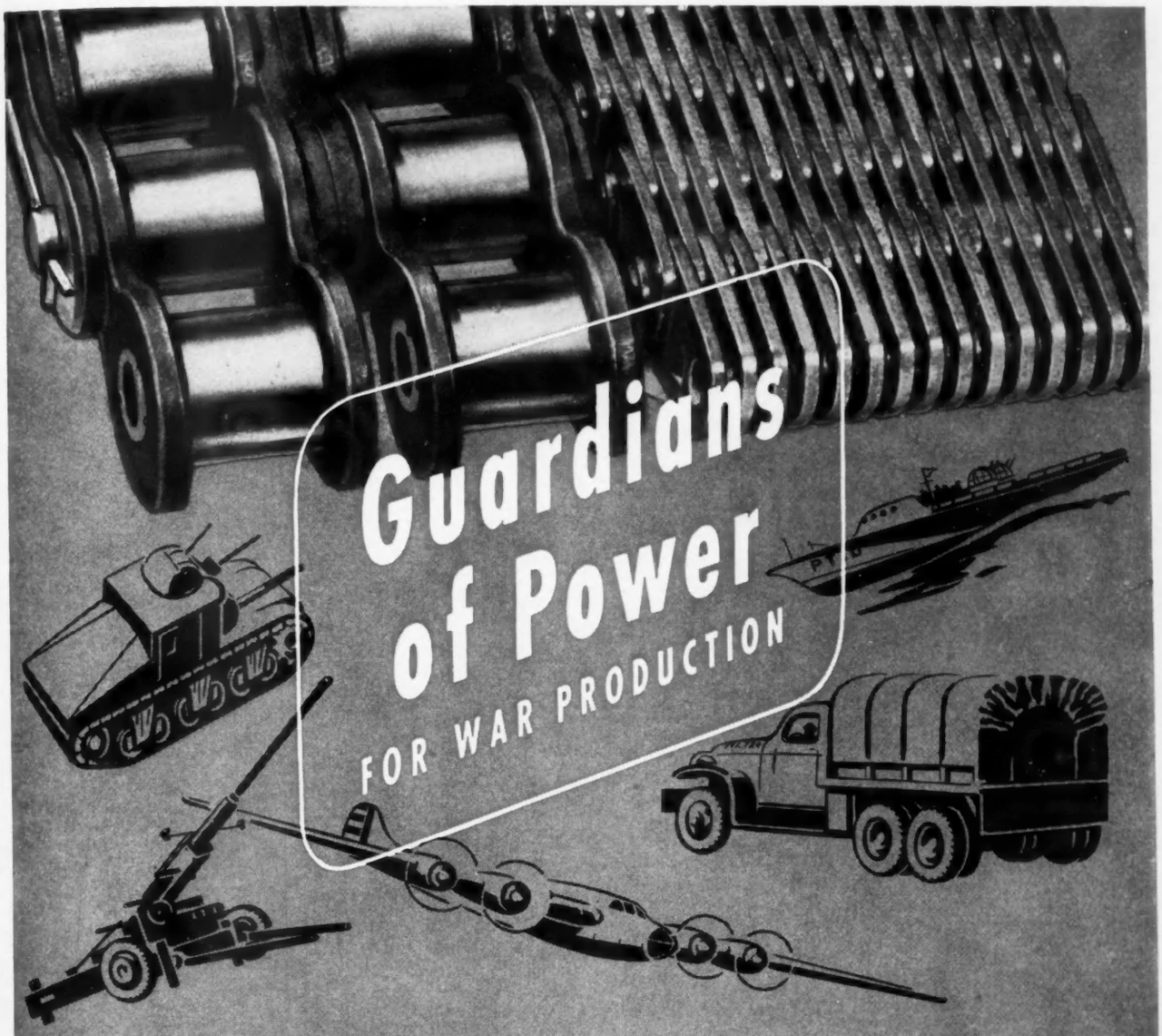
The system is different from the usual compressor set-up in that the intake to the compressor, instead of being open to draw in a charge on each suction stroke, is equipped with a short pipe nipple and a three-way valve. One end of the run of this valve is open to the air, and may be equipped with an air filter if operating under dusty con-



Single-cylinder air-cooled engine V-belt connected to garage-type air compressor for charging mixture sphere. Three-way valve on compressor permits either air or gas to be stored in sphere, pressure settings controlling air-gas ratio of compressed starting mixture.



By using a branched discharge manifold, dual leads to gauge and safety valve, and setting up spheres with a ratio of about one to 10, gas and air are stored separately at the same pressure, and form explosive mixture as they enter and pass through starting line to engine.



To maintain peak war production, you need efficient transmission of power. Virtually, Morse Silent and Roller Chain Drives are guardians of power—a positive safeguard against creep, chatter, slippage and waste. Regardless of speeds, overloads, shocks, or elements, Morse Chain Drives deliver full power constantly at high efficiency. Maintenance is practically non-existent. Morse Representatives are ready to help you in your war production with chain drives engineered to the job.

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS CLUTCHES

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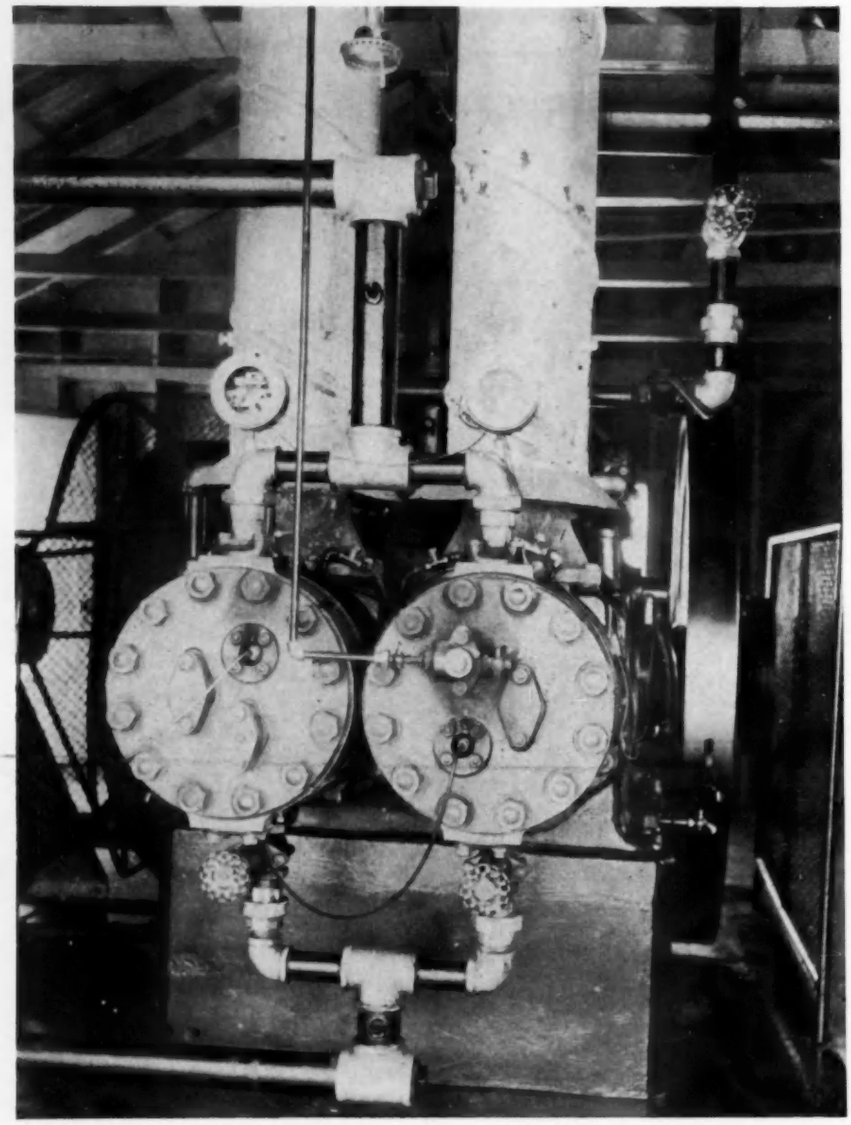


One cylinder of engine is equipped with starting valve, to which is led ⅜-inch line from either single- or dual-sphere system, enabling the operator to admit a charge of properly proportioned mixture directly into combustion chamber behind piston, where hand-timed spark sets normal firing cycle functioning.

ditions. The side opening is connected to the compressor suction, and the third or other run aperture is bushed down and connected to a branch of the gas line normally supplying the big engines with fuel.

By turning this three-way valve, the compressor thus may be used to compress either air or gas, as desired. In one setting of the starting system, compressor discharge is to a spherical tank, 15 inches in diameter, set on a tripod in the corner of the building. This all-welded sphere has a base drain, a delivery line from the compressor tapped into one side, and a discharge line at the top branching to carry a stub on which are mounted a safety valve and a gauge. The relief valve is vented outside the building for safety.

When but one sphere is used, assuming it has been vented or blown down to atmospheric pressure, the compressor three-way valve is set to draw in gas on the suction stroke, and the sphere is charged with gas until the gauge registers a pressure of 5 pounds. Gas is then shut off, the 3-way cock turned to admit air to the compressor, and the unit then run until the gauge shows a pressure of 125 pounds per square inch. When this pressure has been reached the sphere contains a mixture of gas and air, in the proportion of about 1 to 10. This explosive mixture is retained in the tank until it is desired to start the engine. Then, without affecting the normal fuel valve setting, the engine is backed by hand until the right-hand piston has been properly spotted. The air and gas mixture is then admitted through a special valve which is set into the cylinder head, the charge ignited, and the engine thus started.

A variation of this starting system has been developed to answer the objection which might be raised to the storing in the building, over extended periods, of a sphere charged with compressed, explosive mixture. In this type, two spheres are furnished, their volumes being in the ratio of 1:9.71. The discharge line from the compressor in this set-up branches and contains a valve for each branch. The two spheres must be charged separately. The larger one, containing air under a pressure of 125 pounds per square inch, is filled with the inlet valve being set to draw air into the compressor. The small sphere, holding gas under a like pressure, is charged exactly as the gas portion is put into the sphere in the system storing the explosive mixture but at the required 125 pounds pressure does not offer the remotest explosion hazard.

Starting the units with this dual storage system is a little more involved than is the operation when but one sphere is used, it being necessary to tie both storage units into the single feed line to the engine by opening their respective discharge valves, so that each will feed proportionately into the engine line when it is desired to fill the compression space of one cylinder with an explosive mixture.

The power requirement for charging such a proportioning system is but a fraction of that required to maintain the usual tank of starting air, the initial equipment outlay is much smaller, and the results obtained in starting the two-cylinder engines, even in cold, wet weather, extremely reliable. Rarely is it necessary to reset the starting side of the engine after firing the first charge, the next impulse usually occurring in the starting side, as the other piston is already at the bottom of its stroke, and no compression of mixture in engine base is accomplished until the starting piston has made one half of its cycle, when the exhaust of the residue from the initial charge is replaced by normally compressed air-fuel mixture from the crankcase. This is compressed and fired in the usual routine of engine operation, the development of full power not being impeded by the necessity of first clearing the compression chambers of raw air.

Aside from the expected elimination of accidents caused when attempting the starting of the power units, the availability of the pre-mixed charge and consequent easy starting helps prevent accidents formerly caused by the pumper attempting minor adjustments to the engine while operating. It now being so easy to restart after shut-down that he no longer chances injury—and possible dismissal—by failing to observe the company's order to shut down the engine before working on it.

May the wreath we have won never wither

THE War Department and the Navy Department of the United States have conferred upon the men and women of Chain Belt Company the highest honor that can be paid to civilians engaged in war work . . . the Army-Navy "E" for outstanding achievement in production.

Because of our knowledge of the intense determination for Victory which has inspired Chain Belt workers in their willingness to serve and sacrifice, we were not surprised that the award was made. We knew it had been earned and we are gratified that this just recognition has been given.

The Army-Navy "E" pennant will fly proudly from the Chain Belt flagstaffs; and from the lapel of every worker will gleam the shining badge of honor which the Government has cast to signify individual and collective effort beyond the normal conception of duty.

Chain Belt will endeavor to maintain the pace which it has established—to produce more and more for the triumph of our arms.

May the wreath we have won never wither!

THE LAUREL *of this wreath is a symbol of the Victory which Chain Belt workers are determined to win.*

THE OAK *of the wreath symbolizes the strength of the nation—on the battle lines and on the production front.*

CHAIN BELT CO.
OF MILWAUKEE

Oil Industry Feeling Manpower Pinch

By RIVERS REAVES, Staff Writer

THE current shortage of labor brought about by the war has caused a serious drain on the available manpower of the oil industry, an industry hertofore which used highly efficient personnel and operated on an efficiency-plus basis.

This present shortage has caused industry personnel heads to initiate surveys to determine the number of workers that may be called to active military duty and also to attempt to determine the percentage that intend to volunteer for a branch of military service.

As a result of the loss of thousands of workers in all operating branches of the industry, companies are replacing lost manpower with women where the job or position cannot be filled by a man.

Due to the highly technical training that the industry requires in many positions, and also because of bids the War Production Board, the War Manpower Commission and Selective Service System have made for skilled personnel, oil companies are facing an acute shortage of workers in this phase of operations.

Few companies have taken advantage of the War Manpower Commission's recent decision (THE OIL WEEKLY, August 24, 1942) to give liberal deferments to men essential to efficient operation of the oil industry, whose findings are classed as highly important to winning the war, but an increasing number will do so in the future. The commission listed numerous critical occupations in petroleum, natural-gas and natural-gasoline operations as essential to the support of the war. This list ran from petroleum accountant to yardmaster and included those engaged in the nation's refineries, those employed in geophysical parties, as well as geologists and drillers.

Engineering Departments Hit

The engineering departments of the large oil companies are hardest hit by loss of skilled technicians. The Army and Navy have thoroughly combed all industries for this type of man, giving commissions in most instances. The armed services have sought all types of engineers—mechanical, chemical, civil, petroleum, pipe-line, electrical, diesel-electric, as well as many others.

The demands for draftsmen also have made inroads into the number of this type of professional workers. The Navy especially has asked for draftsmen while private ship construction companies who hold government contracts, have made attractive salary offers to induce transfer from oil companies to the shipyards.

Companies can replace draftsmen with women, but engineers, who require from three to five years training, are difficult to replace. A company operating in Texas and Louisiana had a total of 160 engineers on its payroll at the beginning of the war. Through August the number had been reduced to 106

THE oil industry, like many other industries directly engaged in producing war materials, is faced with an ever-increasing shortage of labor. The Army and Navy, the War Manpower Commission and other government agencies are constantly issuing appeals for more men. Shipyards and ordnance plants are draining hundreds of thousands of workers from oil fields and other industries.

Despite this shifting of productive manpower, the oil industry is making plans to meet this shortage. Surveys are being conducted throughout the larger companies; women are filling important positions; consideration is being given to lengthening work hours.

Details as to how executives are going up against this problem—and solving it—are discussed in this article.

The Pan American companies at Houston—production, pipe line, and gas—keep a close tab on employes in armed services. E. R. Turner, vice president, left, and W. V. Garrett of the engineering department, inspect a plaque posted in the office foyer which bears cutouts and names of 60 men, 32 in Army, 27 in the Navy and one in Marines. Thirty-eight of the men were field workers while 22 were in Houston office. Garrett designed and built the plaque which has room for 45 more cutouts.

Scrap Steel for War

WHERE IS HALF THE STEEL REQUIRED TO CARRY ON THE WAR? Half the steel needed to charge open hearth and electric furnaces is steel scrap which must come from oil fields, garages, repair shops and industrial plants.

Since these are our biggest steel mines, let each concern appoint a "mining engineer" with responsibility to collect all the scrap steel at some central location from which it will go to the scrap dealer. Nickel steel brings a premium price depending on the nickel content. Most companies know the nickel content in the tools they buy, or they can get this information from the manufacturers.

If every company will start mining for scrap in a big way now, it will be surprising how much will soon be on its way to be remelted into steel for planes, tanks, ships, and other weapons of war. 60,000,000 tons of steel and iron scrap are required for this year. Let's keep the furnaces running up to schedule.

Our former fellow workers, our brothers and cousins have distinguished themselves as fighting men at Bataan, Corregidor, Midway, Coral Sea, Dieppe, Solomon Islands . . . On every sea and land where they fight the Axis these fellows are getting the job done. The quantity of weapons they get tomorrow depends on the amount of scrap you turn in today. Let's quit talking about it . . . let's do it.

THIS ADVERTISEMENT IS A CONTRIBUTION TO AMERICA'S ALL OUT WAR EFFORT BY THE

HOUSTON LIGHTING & POWER COMPANY

with the prospect that more will go into service, thus showing the need of this type of professional man in the war.

Based upon latest available statistics the oil industry in the United States employs approximately 1,250,000 persons, both men and women, in all phases of operation. This does not include a large number at work at secondary gasoline and oil outlets—garages, parking lots, and country stores. It is estimated that 225,000 persons are employed in the drilling and production and pipeline departments of the industry while approximately 125,000 persons are engaged in refineries and in marine transportation of petroleum and petroleum products.

A cross section survey of the drilling and production and pipe-line divisions in several oil companies revealed that an average of 10 percent of the workers have been lost to the war effort already with the prospect that additional manpower will go into service. Some companies have lost up to 17 percent. A check also showed that most companies can lose up to 15 percent of their manpower without impairing efficiencies. Beyond this point personnel managers are expected to resort to a shifting of labor process and other methods that are now being studied in order to assure maximum production of pertoleum products necessary for the war.

THE War Manpower Commission has approved certain occupations in petroleum, natural gas and natural-gasoline industries as essential to the support of the war effort. The tabulation includes jobs connected with production of petroleum, natural-gas and coal products; those persons working in the drilling, rig-building and maintenance-service operations as well as refineries are included.

Accountant.
Acid-recovery plant operator.
Analyst, geophysical.
Blacksmith.
Boilermaker.
Brickmason, refractory.
Carbon-black plant operator.
Carpenter.
Cementing (well) operator.
Chemist.
Chief Clerk.
Claim adjuster.
Coke burner.
Coke-oven mason.
Coke-oven repairman
Compounder.
Computer, geophysical.
Core-analysis operator.
Dehydration plant operator.
Derrickman.
Designer, equipment.
Dispatcher.
Draftsman.
Driller.
Electrical logging operator.
Electrician.
Engineer operating, chief station.
Engineer operating, chief station, boilerhouse.
Engineer operating, compressor.
Engineer operating, hoist.
Engineer operating, locomotive.
Engineer operating, natural gas.
Engineer operating, power.
Engineer operating, processing.
Engineer operating, supervising.
Engineer operator, processing.
Engineer, professional and technical.
Ethyl blender
Filter house operator.
Fishing tool operator.
Foreman, boilermaker.
Foreman, carpenter.
Foreman, coal washing.
Metallurgist.
Oil blender.
Oil pumper, refinery (operator in charge).
Party chief, geophysical.
Physicist.
Pipe fitter.
Powerhouse switchboard controller.
Purchasing agent.
Rigger.
Seismologist.
Sheet-metal worker.
Shooter, oil well.
Foreman, coke products.
Foreman, communications.
Foreman, electrician
Foreman, filler and package.
Foreman, fire crew.
Foreman, coal products.
Foreman, gas measurement.
Foreman, heat treating.
Foreman, insulator.
Foreman, leads.
Foreman, machine shop.
Foreman, maintenance and repair.
Foreman, petroleum refining.
Foreman, pipe shop.
Foreman, production.
Foreman, rigbuilding.
Foreman, shipping.
Foreman, tank cleaning.
Gas-lift plant operator.
Gasoline plant operator.
Generator operator.
Geologist.
Geophysicist.
Glass blower (instrument).
Grease maker.
Gun-perforating operator.
Houseman.
Inspector, mechanical.
Instrument repairman.
Insulator, boiler, steam, etc.
Interpreter, geophysical.
Laboratory technician (semi-prof.).
Landman, chief or division.
Lead burner.
Machinist.
Maintenance mechanic.
Manager, employment.
Manager, office.
Manager, operations.
Manager, personnel.
Manager, traffic.
Material and warehouse inspector.
Material inspector.
Metal and equipment inspector.
Stillman.
Tank builder.
Test-engine operator.
Tool dresser.
Tool pusher.
Topman.
Treater, oil well acidizing.
Treating plant operator.
Washerman.
Wax-plant operator.
Welder, combination.
Welder, high pressure.
Yardmaster.

Plans to Meet Shortage

To meet the impending shortage oil companies presently are studying the following plans:

1. Survey or inventory of worker status in all departments.
2. Shifting of workers.
3. Training of women.
4. Longer work weeks.
5. Reduction of workers due to priorities, material shortages.

A majority of companies already have started surveys to determine the status of all employes. These inventories, in the case of large companies, are being conducted by department heads to ascertain the minimum number of persons required to conduct operations on a wartime basis and to arrive at the number of workers who might be typed as "flexible personnel"—those who can be moved from one department or division to another department without going through job orientation that ordinarily would require considerable training and expense.

The surveys are being conducted in fields and on pipe lines as well as in offices—from day laborer to superintendents, from office boy to high officials. Under Selective Service many oil company officers face the draft.

When the inventory is completed and the data tabulated, department heads and personnel managers will have a detailed account of how many persons can be lost.

Women Workers Increase

Women already are performing more duties in oil companies than ever before, and with men constantly going into service the prospect is for an even larger number of women on payrolls. Even though there are limitations to jobs that can be filled by women from a physical stamina viewpoint, they are being employed to fill jobs that were occupied solely by men heretofore. Womanpower can never be substituted for manpower on drilling rigs, as roustabouts, in pipe gangs, road crews, and pipe line construction forces.

Department heads already are placing experienced women in responsible jobs left vacant by military-age men. A gradual stepping up of women to more responsible jobs is taking place in order that all departments may function

Help Them Win...Turn in Your SCRAP!

Scrap is steel or iron useless in its existing form but valuable as *raw material* for remelting. Since it is already refined, more scrap in the furnace charge speeds up the refining process and enables steel to be turned out faster for implements of war... More scrap—*from your plant*—means more steel.

Conservation Authorities Recommend the Following 8 Steps

1. Put some one individual in charge of scrap in all departments of your business and GIVE HIM AUTHORITY TO ACT.

2. Comb the plant and yards for dormant scrap, abandoned equipment, old boilers, pipe, moulds, obsolete dies and parts, material now being destroyed which has salvage value.

3. Survey all plant equipment, particularly idle standby or discarded machines, with a view to applying or converting them to useful production.

4. SEGREGATION: Identify, classify and segregate scrap and supervise its handling to avoid contamination. This will increase its value. Provide separate containers, clearly marked for each class of scrap material.

Repair or rework worn or broken cutting tools. Keep unusable small pieces and turnings segregated. Even high speed steel grinding dust is valuable.

Dismantle discarded equipment promptly into its components — electrical, fastenings, lumber, etc. — so that these parts may be utilized or scrapped.

Sort blanks, short ends, cut-downs, clippings, etc., for possible reuse for smaller parts made in the same or other departments.

Recover and reclaim used cutting oils, lubricants, surplus paints and spray finishes.

Sort sweepings and miscellaneous waste to recover scrap values.

5. Constant reminders in the form of posters, illustrations of right and wrong methods, pay envelope enclosures, house organ publicity, etc., are potent aids to the conservation program.

6. Release for scrap, obsolete engravings, electrotypes, and standing types for catalogs, forms and advertising material.

7. Inspect all refuse to detect avoidable waste and excessive rejections. Educate production executives to correct such conditions at the source.

8. For information and assistance on special phases of conservation and salvage communicate with Industrial Salvage Section, Conservation Division, War Production Board, 9th Floor, Washington Gas Light Building, Washington, D. C., or with nearest regional office.

The metallurgical experience of our technical staff is available to aid you in these and other technical phases of metal salvage.

KEEP SCRAP MOVING INTO WAR PRODUCTION!

THE INTERNATIONAL NICKEL COMPANY, INC. **67 WALL STREET NEW YORK, N. Y.**

as usual, however, executives have a faint hope that enough men may be kept to fill key positions and act as supervisors over staffs of women workers.

Training schools have not been started to acquaint women with duties associated with their new jobs, although it is believed training classes may be necessary in the future. New women workers are getting their job experience through the channels regularly pursued in normal times, however when this method will be drastically changed is a source of worry to department heads who are reconciled to the fact that women will occupy more and better jobs throughout the oil industry.

Longer Hours Considered

A few oil companies are giving consideration to longer work weeks, especially in the field. In West Texas areas, for instance, where the population is sparse, draft boards have taken large numbers of drillers, roughnecks, and roustabouts. Large numbers have found employment in ship yards and similar defense plants directly connected with the war effort. Others volunteered for military duty when they were faced with the prospect of being drafted.

One company operating in West Texas found that this type of labor was the hardest to replace, and has gone on a 48-hour week. The company has not asked for deferments. A few men have been employed in fields that heretofore were considered unemployable due to physical handicaps.

Estimates as to additional costs of paying overtime under longer work periods have not been made, but officials know the payrolls will increase materially where employes work up to 60 hours per week.

The number of field workers has been reduced in some instances due to a shortage of materials and equipment that require high priority ratings.

Due to the difficulty in procuring production equipment, a large number of men are off the employment list, some permanently. Drilling has slowed almost to a standstill in old proven fields while pipe-line construction is held to actual emergency needs. Wildcat operations, which require considerable equipment and men, are below the number of wildcats drilling last year. Operators are continuing to drill prospects, however, in attempt to keep up reserves and not place a serious drain on available supplies.

Labor Pinch General

The oil industry is not alone in feeling the manpower pinch. Plane factories, ship building companies, steel plants, and other defense units are calling for more and more men—especially skilled and semi-skilled laborers. These urgent appeals are being made in addition to millions of able-bodied men who are going into the armed services. There is no indication of a let-up in the demand for labor.

In Boston recently, Edward F. McGrady, consultant to the secretary of war, disclosed that 19,900,000 persons will be inducted into "war activities" this year and next, giving the source of the figures as the War Manpower Commission.

Paul V. McNutt, chairman of W. M. C. asserted in Omaha that it is perfectly obvious that all physically-able men of military age in this country, regardless of dependency, will ultimately be in the armed forces.

With these facts in mind the oil industry is adjusting its personnel to meet the emergency. And the emergency is calling for large amounts of petroleum—amounts that will be delivered by one means or another in the all-out-for-victory.

WASHINGTON ROUNDUP

[*Continued from page 16*]

any employer to pay, or any employe to receive, wages or salaries in contravention of the regulations to be promulgated by the President. Willful violations will be punishable by fines not to exceed $1,000.

One provision of the measure empowers the President to limit or prohibit the payment of double time except when, because of emergency conditions, an employe is required to work for seven consecutive days in any regularly scheduled workweek.

☆

BIG-INCH LINE: Construction of the "big-inch" pipe line from Longview, Texas, to Norris City, Illinois, is hanging up new records despite difficult weather, the latest report to the OPC by War Emergency Pipelines, Inc., discloses.

Completion of 8.15 miles in one day, September 23, set up a mark for future pipe-line builders to shoot at, and a two-week average of approximately 6 miles a day set a record which the company said has not been beaten even for the laying of 10- or 12-inch pipe.

With nearly 155 miles of pipe in the ground, the line is nearly 30 percent laid, while it is estimated that the river-crossing work is well over 50 percent completed.

The line already has been laid beneath the Red, Little Missouri and Ouachita rivers, work on the Arkansas and White River crossings is nearing completion, and the crossing of the St. Francis will be finished before October 15.

"With a normal break on the weather and a minimum of labor and transportation difficulties, the big-inch pipe line should be completed in December and ready for initial operation by the first of the year," Deputy Coordinator Davies commented in making the report public.

RUSSIA: Plans for the acquisition of two Texas refineries by the government, their equipment to be torn down and shipped to Russia under the lend-lease program, were announced during the week by Secretary of the Treasury Henry Morgenthau, Jr.

Accompanying the used material will be additional new equipment meeting Russian specifications. The plant has been indicated as being for the production of aviation gasoline.

The shipment of a complete refinery to Russia marks a new departure under the lend-lease program, this being the first instance in which such equipment, ready to be set up, has been shipped.

Morgenthau explained that OPC has been studying plans proposed by the Russian government, and that when the coordinator's letter of approval was received the purchase was authorized through the procurement division in 18 minutes.

Although the first operation of the sort under lend-lease, it was said another refinery previously was purchased for shipment to Russia, but with Russian funds.

☆

TANKERS: With its cargo ship and turbine program running ahead of schedule, the Maritime Commission is preparing to catch up with American tanker losses by diverting some of the existing shipbuilding facilities.

First step in this direction was the awarding of a contract to the W. A. Bechtel Company, Sausalito, California, for construction of 22 large tankers, to be started upon the completion of 12 of 34 Liberty ships for which it now holds a contract.

Under the tanker contract, the Bechtel yard will complete its first vessel next May and the remaining 21 ships will be delivered into service by the end of 1943. The vessels will be 523 feet in length, 68 feet in beam and 39 feet in depth.

No repairs, practically no wear in 25,000 hours of operation!

— another example of better lubrication with Gulf Quality Lubricants

Actual photo of a Gulf engineer *(left)* consulting with chief engineer on Diesel engine lubrication.

"The maintenance record of this Diesel has been remarkable with Gulf lubricating oil in service," *says this chief engineer.* **"The tool marks are still visible on the lower compression rings, and cylinder wear totals only .005 inches after five years of operation."**

THE 5-year maintenance record of this Diesel unit with Gulf lubricating oil in service is hard to beat. Over 25,000 hours of operation during this period, yet no valve replacements or other repairs necessary, and cylinder wear totals *only .005 inches!* Here is additional evidence of the *higher protection value* of Gulf quality Diesel lubricating oils.

There are good reasons for the exceptional performance of these superior Diesel lubricants! They are manufactured from selected crude oils by the most modern refining methods. And built into these lubricants are stability and stamina—they stand up and provide a tough long-lasting film which affords maximum protection to cylinders, bearings and pistons. Result: minimum wear, minimum down time, and efficient, dependable Diesel performance under the peak load operating conditions of today.

If you have any reason to feel that the operating or maintenance records of *your* units could be improved, ask a Gulf engineer to call. His broad experience with many types of Diesels is your assurance of sound suggestions which will help you get more efficient performance and lower operating costs.

The services of a Gulf engineer—and the Gulf line of quality Diesel lubricating oils—are quickly available to you through more than 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

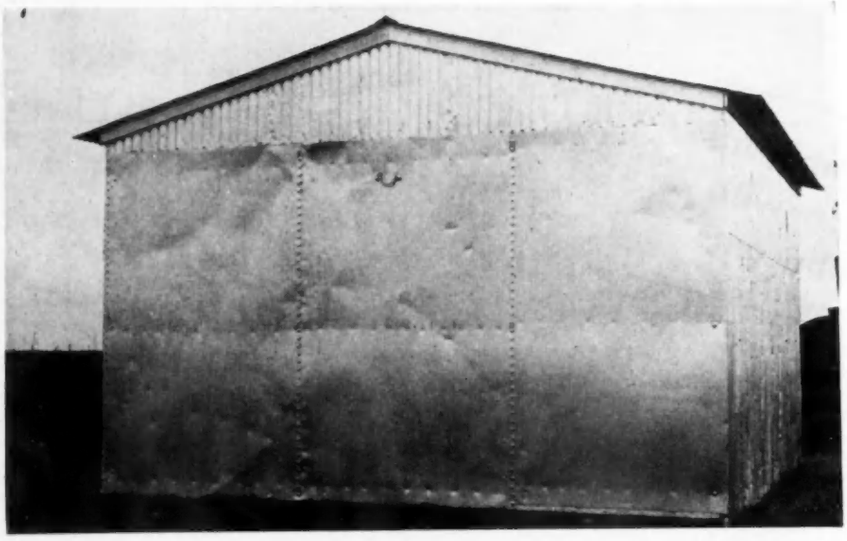
GULF OIL CORPORATION
GULF REFINING COMPANY
GULF BLDG. · PITTSBURGH, PA.

OIL IS AMMUNITION — USE IT WISELY!

PRACTICAL OPERATING *Hints* FOR

1. SERVICING

Removable Side Wall On Puller Shelter



Access to servicing unit is provided by removable section, bolted in place from within, yet being readily laid flat for passage of machine or raised by usual winch equipment.

AN OIL company possessing a pulling unit for servicing wells on leases in the Placedo field, Texas Gulf Coast, constructed a small house to protect the machine from salt air and against prowlers when not in use. The house features a demountable end which may be taken off by withdrawing four bolts. On the opposite end of the building, an ordinary-sized door is placed to permit entrance into the structure, to allow removing small tools and equipment stored there.

The building is of corrugated iron sheeting nailed and bolted to a wooden frame, with a low ridged, corrugated iron roof. It is about 12 feet square, furnishing ample space for storage of equipment. However, the pulling machine is too large to pass through the door in front of the house, and accordingly, to utilize fully the house and storage facilities, the rear end was constructed to be removed from the building in a single section, providing ample space for the machine.

The removable end is tank steel plate, flattened into a 12 x 6-foot sheet. Bolt holes are drilled at each corner, and the sheet bolted to the remainder of the house. By removing bolts, the sheet is removed from the structure, leaving the end wide open. To facilitate handling the end piece, a chain six inches long is welded to the face to provide a suitable means of placing hook when moving the section.

When weather permits, the removable side may be laid flat and thus ample air and light provided for maintenance work on the stored equipment.

2. LEASE SAFEGUARDS

Earth Fill Serves to Block Unlawful Entry

THE problem of preventing unauthorized entry to unfenced lease and other company property is greatly intensified by the need to forestall possible sabotage.

One company revised the system of roads entering its properties, and with bull-dozer threw up high earth fills across all roads marked for closing. Roads which had been graded and oiled were plowed up to leave large lumps of surfacing in the former path, with the deep ditch thus formed on the inside of such a dike.

A count of random traffic through the lease with the various earlier easy access highways still intact, as compared with one when all traffic was forced by the dikes to enter and leave past the company office, showed a remarkable decrease in the number of cars on the property.

With the dike, anyone now found trespassing on the leases is regarded as an intruder and potential offender, and is promptly halted by company employes.

Unfenced property may easily be barred to trespassers by turning furrows across unauthorized roadways and thus forcing traffic to pass dog-house or definite control point at main entry.

3. WIRE LINE CARE

Clearance Window in Rig Halts Abrasion

PRODUCING wells still equipped with derricks often present a problem when they are to be pulled with the currently popular truck-mounted pulling units, because of wear on the wire line between derrick girts.

A solution to the problem was devised by one company by cutting a window between the second and third girts in that side of the derrick from which the well is to be pulled, and which permits the pulling unit to be set up outside the derrick floor limits.

The two long diagonal braces were removed, and in the center of that open space were bolted two 7-foot angle iron members spaced some two feet apart. Before these uprights were bolted in

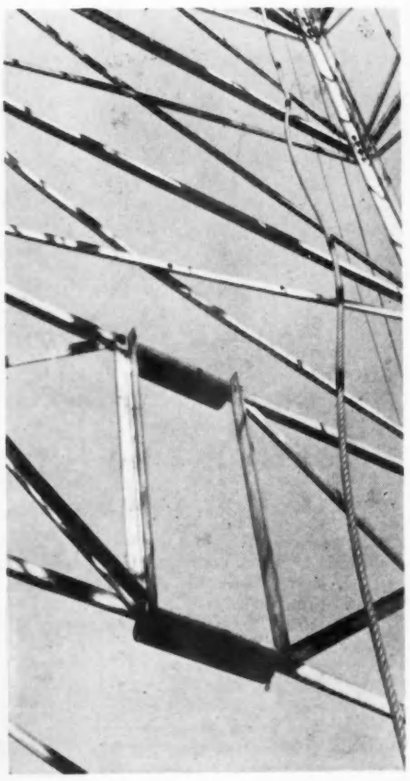
THE PRODUCTION MAN

THE practical operating hints for the drilling rig, production man and pipeliner, appearing regularly in these pages, are secured from oil operations everywhere and offer suggestions that will help to improve operating efficiency and safety.

The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, The Oil Weekly, Houston."

place, however, the two main girts were loosened at one end and a short length of 4-inch pipe was slid along each girt and spotted between the two vertical uprights. Shorter cross-bracing then was installed on either side of this narrow window.

Although pulling units are spotted outside the derrick in such a position as to cause the line to wear very little against the derrick members, it is impossible to prevent occasional scuffing against the top or bottom of the opening. It is to minimize such wear that these rollers were mounted in the small window.



Pipe-shod girts and angle-iron uprights form protected zone in which line may be brought outside.

4. POWER CIRCUITS

Extra Conduit Saves Time of Electrician

Utilizing long lead to motor permits it to be set aside for servicing unit without disconnecting.

IT IS OCCASIONALLY necessary to move the motor from a pumping unit in order to service the equipment properly. Disconnecting and reconnecting the motor is properly a task for a qualified electrician, in order to protect circuits, motor and other equipment from possible damage through improper handling of the wiring—and most often an electrician is not available when the need for motor shift is discovered.

One company provides for this contingency by equipping the motor with a long lead-in conduit, instead of making the connection as short as possible between control and motor. With this long flexible conduit protecting the wires, it is possible for the switcher, roustabout or other member of the maintenance gang to remove the bolts holding the motor on its base, and then to set the power unit aside to the limit of the conduit without touching the electrical connections.

The motor may then be replaced and started anew with every confidence that the wiring will be correct, and that no electrical damage can ensue.

TEXSTEAM *Oil-Bath*
CHEMICAL INJECTOR

FOR ONLY $24

Delivered east of the Rockies

Model shown is Type 500-S single ratchet unit, operating off walking beam. Includes: ¼" line check valve—heavy gauge welded 4-gallon container. Pressures up to 5000 lbs. See page 2301 of Composite Catalog, or write for bulletin describing complete line.

Available through National Tank Co. or your local Supply Store.

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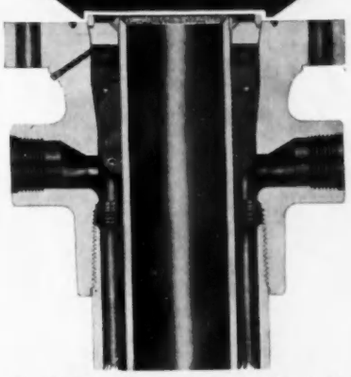
RHX
RECTORHEADS



For Safer, More Economical Installation With Higher Pressure Units

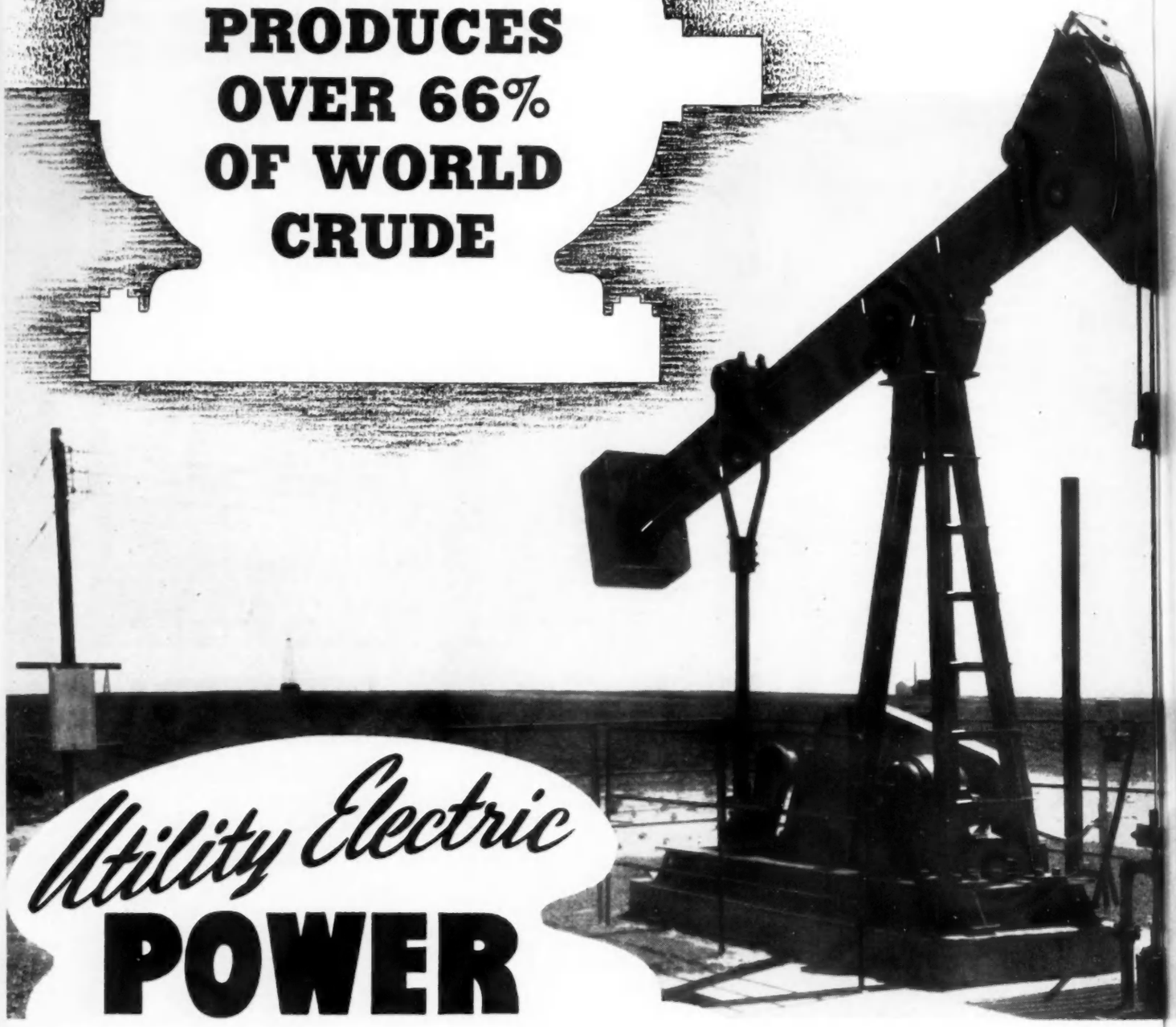
A 6000 lb. RHX RECTORHEAD, with 900 series flange, may be set and used during drilling operations, with blowout preventer flanged direct. After oil string is set, a 10,000 lb. test tubing head with 900 series flange on bottom end may be flanged directly to the RHX, using the restricted ring groove, without the use of intermediate flange.

Stocks of all type heads are available for immediate delivery.

RECTOR WELL EQUIPMENT CO. INC. RECTOR MAKERS OF THE OIL INDUSTRY SAFER

RECTORHEAD
"MAKING THE OIL INDUSTRY SAFER"

U.S. PRODUCES OVER 66% OF WORLD CRUDE



Utility Electric POWER

PLAYS BIG PART IN PRODUCTION AND REFINING AND LOW COST OF PETROLEUM PRODUCTS . . .

Yes, the United States produces more than sixty-six per cent of the world's crude output. This means that our country has a greater supply of motor fuel and lubrication than all other countries combined.

Interesting, too, is the fact that America produces, refines and markets this supply of petroleum at a lower cost than any other country in the world.

Efficient, economical *Utility Electric Power* is responsible to a great extent, for lowering production and manufacturing costs of these products. Facts are: Installation, operating and maintenance costs are lower; easy to keep in perfect running condition by proper maintenance and simple repairs; automatic stopping and starting further reduces overhead expense; lessens the requirement for man hours, money and critical materials.

Operators using *Utility Electric Power* are more aware of these benefits now than ever before. They know that the economy and extra efficiency of this power plays an important part in winning the war. So, take greatest care of *your* motors and equipment. Make them last . . . Prevent breakdowns . . . and help keep America's petroleum production UP!

Use Utility Electric Power!

PETROLEUM ELECTRIC POWER ASSOCIATION

Box 1498, Oklahoma City, Oklahoma

The Week's News

New Allowables Promise Production Near Demand

Allowables fixed for October by the authorities of the flush-production states conform closely with recommendations of the petroleum coordinator, and their net result likely will be actual production approximating the indicated requirements.

Texas is the only state that varied materially from the OPC allocations; and while the allowables of that state are calculated to result in more production than recommended, the excess will be largely compensated, from a national standpoint, by indicated continuing inability of several states to fill quotas.

Such underproduction of quotas in September amounted to about 50,000 barrels daily for California, 15,000 for Kansas, 43,000 for Oklahoma, and 23,000 for Illinois.

If those states should underproduce by similar margins in October, such underproduction would almost balance the prospective overproduction of about 165,000 barrels daily which apparently will occur in Texas under the proration order for the month.

Details on October allowables and trends of underproduction or overproduction are shown in an accompanying table.

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Compact Commission Gets Data on Gas Industry

The Interstate Oil Compact Commission, meeting in the Palmer House at Chicago last Thursday, Friday and Saturday, devoted its quarterly conference to studying the importance of natural gas conservation, particularly as it pertains to the war effort and the national economy.

The expansion of pipe-line facilities, developments in the liquefied-petroleum-gas industry, Bureau of Mines research, technical developments in gas synthesis, gas utilization for synthetic production, and natural gas conservation, all received attention of the 75 in attendance.

Harold L. Ickes appeared unexpectedly at Friday's morning session and spoke briefly, his remarks were off the record.

Five state governors were on hand when the sessions opened Thursday with conferences of the executive and legal committees. The chief executives present included Governors Dwight Green of Illinois, host for the first time to a compact meeting; Leon C. Phillips, Oklahoma; John E. Miles, New Mexico; Payne H. Ratner, Kansas, and Dwight Griswold, Nebraska.

Although Nebraska is not a member

October Allowables Forecast Production Near OPC Recommendation

(Barrels daily of crude oil, condensate, and natural gasoline.)

STATE	Recommendation of Petroleum Coordinator September	Recommendation of Petroleum Coordinator October	State Allowable Beginning of October	Difference October Allowable from Recommendation	Percent Difference October Allowable from Recommendation	REMARKS ON STATE ALLOWABLES FOR OCTOBER
Arkansas	81,900	79,500	73,107	— 6,393	— 8.0	Basic allowable production of all petroleum liquids during Oct.-Dec.; expected to rise to 75,000 by end of December due to new production.
California	791,500	782,000	782,000			Actual production in 4 weeks ended September 26 was 49,950 barrels under allocation and allowable for September. Allowable distributed to fields by Conservation Committee of California Oil Producers.
Kansas	285,300	294,000	294,000			Actual production in 4 weeks ended September 26 was 14,900 barrels under allocation and allowable for September.
Louisiana	334,800	337,200	337,200			Expected actual production of all petroleum, allowing for 24,000 liquid hydrocarbons other than crude, and estimated actual crude production of 313,200, under order which fixes crude allowable at 325,200 barrels but which also takes into consideration estimated 12,000 barrels underproduction of deficient wells.
Michigan	66,700	65,700	64,793	— 907	— 1.3	Expected production under regulations which do not fix definite state allowable.
New Mexico	98,100	101,100	101,100			
Oklahoma	415,300	417,000	417,000			Actual production in 4 weeks ended September 26 was 43,500 barrels under allocation and allowable for September.
Texas	1,397,800	1,407,600	1,572,602	+ 165,002	+ 11.7	Indicated daily average allowable of all petroleum liquids; including about 200,000 barrels distillate and fluids, and estimated actual crude production of 1,372,602 under order which fixes basic allowable for crude at 1,455,261 as of October 1. Texas fields in general will be shutdown on October 3, 4, 10, 11, 17, 18, 24, 25 and 31, but number varies in different fields.
Total 8 Prorated States	**3,471,400**	**3,484,100**	**3,641,802**	**+ 157,702**	**+ 4.5**	
Illinois	289,200	280,000	264,850	— 15,150	— 5.4	State not prorated, and figures here shown represents actual daily average production in 4 weeks ended September 26, which was 24,350 under OPC September allocation.
Mississippi	50,200	50,000	73,050	+ 23,050	+ 46.1	State not prorated, and figures here shown represents actual daily average production in 4 weeks ended September 26, which was 23,050 above OPC September allocation.
Total 10 Flush Production States	**3,810,800**	**3,814,100**	**3,979,702**	**+ 165,602**	**+ 4.3**	
Other States	255,700	252,100				
Total United States	**4,066,500**	**4,066,200**				Actual production of nation in October, apparently will be closely in line with OPC recommendation, as indicated excess in Texas and Mississippi, will somewhat more than compensate for probable underproduction in California, Arkansas, Illinois, Oklahoma and Kansas.

of the compact, Griswold's presence was interpreted in some quarters as indicating that his state may make overtures for membership in the organization.

The compact meeting opened just as the National Conference of Petroleum Regulatory Authorities were concluding a two-day session in the same hotel. The regulatory authorities, which formed an organization last spring at the request of Harold L. Ickes, wound up their conference by adopting several important resolutions, one of which asks that there be no gasoline rationing in oil-producing states.

"The National Conference of Petroleum Regulatory Authorities suggest to the authorities charged with the responsibility of effecting a nation-wide rationing program of gasoline," the resolution reads, "that no necessity exists for rationing gasoline in the oil-producing states because of the unavailability of gasoline and that where regulations may be made affecting this rationing program that they should be confined to the use of such consumers as will effect a saving of rubber and that other consumers using gasoline be not rationed."

In another resolution the group asked that the government provide for an immediate increase in the price of crude oil and that the industry be furnished necessary supplies required for exploration and development of new reserves.

The authorities also adopted a measure asking the government to concentrate separate authorities over petroleum which have been set up to spur the war effort. They suggested that the administrator should be the present petroleum coordinator.

First speaker at the compact meeting was Ralph E. Davis, natural gas consultant of Pittsburgh, who assured commission members that the known gas reserves today are greater than at any previous year, totaling about 85 trillion cubic feet.

Gas Reserves

"This statement is based upon the fact that in every recent year very substantial additions to the known natural gas reserves have been made and in amounts annually exceeding the total gas withdrawals," he said.

In this connection he called attention to a comparatively recent discovery of a large, high-pressure reserve along what is known as the Wilcox trend in a belt that crosses South-Central Louisiana and South Texas.

To present a breakdown of the nation's reserves, Davis divided the country into five districts, Appalachian, North - Central, Mid - Continent - Gulf Coast, Rocky Mountain, and California.

He pointed out that the Appalachian area, including New York, Pennsylvania, West Virginia, Ohio and Kentucky, had produced about 16 trillion cubic feet of gas at the end of 1940, exclusive of wastage, and that gas in this region has been obtained from more than 30 separate horizons. In 1940 the area produced 385 billion cubic feet and in 1941 production was probably slightly in excess of 400 billion cubic feet, he said. Davis estimated the Appalachian district has proven reserves of 5 trillion cubic feet but that potential reserves are of small magnitude, even though commercially they will be important. He predicted that the area's production in 1942 would equal the 1941 output.

In the North-Central area he included Michigan, Indiana and Illinois, which produced about 270 billion cubic feet between 1906 and 1940. Known recoverable reserves of the area are only 200 billion cubic feet, he said, principally because of the uncertainty of conservation becoming effective in Illinois. Prospective reserves are judged to be of a similar amount.

Davis referred to the Mid-Continent-Gulf Coast region as the great storehouse of presently known reserves. The area includes Texas, Louisiana, Arkansas, Oklahoma, Kansas and Southeastern New Mexico.

"Summarizing this district," he said, "we find it to contain presently proven recoverable reserves totaling approximately 70 trillion cubic feet."

He pointed out that an estimate of ultimate potential reserves would be but a guess and then predicted they would be of an order approaching the present-known reserves.

Davis declared the Rocky Mountain States have known reserves approximating at least 750 billion cubic feet.

"Substantial additional reserves should eventually be discovered in this broad region by further development of known structures and discoveries in possible areas not yet explored," he states.

Davis estimated California's recoverable reserves at 9 to 10 trillion cubic feet and said that additional reserves should be found with deeper drilling in present fields.

"If the preceding statements and analysis of the natural-gas-reserve situation in the various districts of the United States be at this time a fairly correct picture we may note that the total proven reserve is of the order of 85 trillion cubic feet and that potential reserves, difficult at best to visualize quantitively, may be of a similar quantitive order," he declared.

It is unfortunate, Davis said, that developed and potential reserves are relatively small in certain regions where the demand for gas is great.

"It is to be expected that this situation will within reasonable time and as the conditions permit, be overcome in part at least by the installation of new transmission facilities so that gas may be taken from areas of super-abundance to areas strong in demand but short in supply."

He added that natural gas marketed in the United States has increased more than threefold in the past 20 years and that unless "everything goes haywire," this trend should continue.

Davis advocated wide-scale conservation as a move essential to maintain the immense and increasing flow of gas, but also said great improvements in efficiency of use already have been made.

Gas Lines

The other speaker Friday morning was N. C. McGowen of Shreveport, president of United Gas Corporation. His subject was "Pipe Line Systems for Natural Gas."

McGowen said pipe-line expansion, "must not be on the business-as-usual lines." He pointed out that between 1928 and 1941, pipe lines transporting natural gas were expanded from 57,000 to 90,000 miles. In the same period the number of communities served with natural gas increased 200 percent.

McGowen said that known gas reserves of 80 trillion cubic feet and the 1941 demand of three trillion cubic feet indicated a natural gas life in excess of 25 years. He advocated the continued drilling of gas wells. "The pipe lines, in figuring their demands for gas must require producers to carry on a continuous drilling program to meet the normal demands and also to maintain sufficient delivery capacity to meet demands brought on by increased industrial loads," he said. He added that it was apparent transmission facilities must be expanded but "our expansion must be weighed at present to that which is absolutely necessary and essential to the war effort."

E. H. Poe, director of the Natural Gas and Natural Gasoline Division of OPC attended Friday's session. Although he did not appear on the program he said in an interview that gas-producing states must adopt modern and uniform laws relating to production and conservation of gas. He called present gas conservation laws obsolete and useless, and expressed opposition to the Oklahoma law which provides that only 25 percent of a field's daily potential production can be actually produced daily. "There is grave shortage of natural gas," he said.

"In addition there is a serious pipeline shortage for getting the gas from the field to the consumer, whether that be householder or industry." He advocated the adoption in each state of laws which will provide for the taking of gas from the fields according to the structure of the fields.

Friday afternoon a technical forum was conducted by the research and coordinating committee at which Frederick W. Sullivan, Jr., technical director, explained the operation and organization of the comparatively new institute of gas technology at Chicago, which was formed in 1941.

Primary functions of the institute, according to Sullivan, are to train personnel, to carry out and encourage research and to distribute information concerning gas. The institute is supported by member companies which are divided into two groups—utilities and appliance and equipment manufacturers. The educational program is designed to provide study leading to degrees of M. S. and Ph.D. with special study in gas technology. At present the fundamental research activities of the institute are concerned with the broad fields of catalysis and absorption, Sullivan explained.

Dr. Gustav Egloff, director of research for Universal Oil Products Company, Chicago, discussed "Present and Future Gas Utilization for Synthetic Products," at the Saturday morning session.

The other Saturday speaker was G. L. Brennan, manager of the liquefied petroleum gas division of Warren Petroleum Company, Tulsa. His subject was "Development of the Liquefied-Petroleum-Gas Industry." He declared large volumes of liquefied-petroleum-gas formerly wasted, now are being conserved for important uses and predicted that during 1942 nearly 2,000,000 gallons of propane will be produced and sold daily.

"To what extent normal butane will be used in the manufacture of butadiene for rubber is still a big question, possibly much of the proposed refinery-conversion program suggested will use other petroleum fractions—nevertheless normal butane remains an important raw material for the production of synthetic rubber."

Seek Well Allowable Transfer in East Texas

Sun Oil Company has requested permission to transfer allowables from one well to another on one of its East Texas leases. This application, the first of its kind, was heard by the Railroad Commission last week.

The purpose of the transfer is to obtain the allowable for wells which have ceased to flow, but for which federal authorities have declined to allow the purchase of pumping equipment.

The company displayed evidence of its effort to obtain OPC approval. Included in letters from OPC was the statement that "the East Texas field is capable of sustaining, and even exceeding, its present production rate without the use of additional equipment. There is a scarcity of pumping equipment for fields which cannot maintain their production rates without it. For these reasons, it is neither in the public interest, nor in the interest of the war effort, to install the aquipment as applied for."

Sun showed that there are 12 wells on the particular lease, of which 7 are equipped with pumps. Unless the allowable for the remaining 5 wells can be transferred as they cease to flow, the company estimated it would lose 5000 barrels of oil a year which each well would produce normally.

The hearing was the first of its kind involving the fact that federal authority prohibits the use of pumping equipment on wells to which less than 10 acres has been assigned. It is possible that the order entered in this case may establish a precedent which will govern operations in the East Texas field and other fields of the state during the remainder of the war.

Several major companies, including those with the most production in East Texas, attended the hearing. They endorsed the application filed by Sun. Questioned concerning their views as to the operation of such an order on a field-wide, or state-wide plan, the consensus expressed was that much more information would have to be obtained before a definite policy could be recommended.

Explains Opposition to Lease-Allowable Plan

Commissioner Olin Culberson of the Texas Railroad Commission in discussing the proposed hearing to be called for the purpose of determining whether or not lease allowables shall be substituted for per-well allowables, called attention to the danger that could arise, and which in his opinion would arise, of operating practices that would bring about drainage from one lease to another by reason of the production on the lease basis. Culberson expressed his grave concern that innumerable instances would be made possible and that the early condition that marked the East Texas field would again become prevalent where operators would produce their entire allowable from wells offsetting the adjoining lease line.

Culberson declared that in his studied opinion to change from well to lease allowables would mean the nullifying of the safeguards given the small operator by the Rowan & Nichols decision and stated that this was, in his opinion, the most important and by far the most dangerous result that would follow the adoption of a lease-allowable plan in preference to the well-allowable.

Culberson stated he recognized the situation confronting operators, especially in East Texas, whose wells require pumping equipment which under M-68 of the OPC cannot be secured, and stated that he stood ready to do everything possible to render any assistance that would give them relief; however, he said he seriously doubted the wisdom of abandoning the policy of well allowables which has been so firmly established and which policy had the approval of the Supreme Court of the United States in the Rowan & Nichols case.

Asked as to what he thought was the solution of the problem, Culberson stated it was too difficult and complex to be solved with the meager information at hand and that until a public hearing could be held wherein all of the problems and difficulties being presently experienced could be presented to the commission, he had no definite solution to suggest.

Culberson stated that he believed there was food for thought in the fact that the commission instead of requiring shutdown days on specific dates could provide only the total number of producing days to be had during the month without specifying the dates, thus leaving the selection of the producing days to the convenience of the operator who could accommodate his production of the lease to fit his man

Prominent Speakers on Texas Mid-Continent Program

The program of the annual convention of the Texas Mid-Continent Oil and Gas Association, which opens in Dallas on Friday morning, October 9, includes such prominent speakers as: Dr. Robert E. Wilson, chairman of the Petroleum Economics Committee of the Petroleum Industry War Council and president of Pan American Petroleum & Transport Company, New York; Don R. Knowlton, Director of Production, OPC, Washington; D. E. Buchanan, Director of District 3, OPC, Houston; Lt. Colonel Darnce B. Burns, Chief of the Manpower Division, U. S. Selective Service, Austin; Major General Richard Donovan, commanding the Eighth Service Command, Fort Sam Houston.

Dr. Wilson will speak on the subject of transportation and supply in Districts 1, 2 and 3; Knowlton and Buchanan are scheduled to discuss drilling and production practices and the place of the Texas petroleum industry in the war effort; Colonel Burns will outline the effect of selective service upon the Texas petroleum industry; General Donovan will discuss the functions of the Eighth Service Command and their relationship to the Texas petroleum industry in defense activities.

George Sawtelle, president of the association, will make his annual address, combining the highlights of work done by various association committees during the past year and will outline some of the problems confronting the Texas oil industry at this time.

A feature of the convention will again be the presentation of distinguished service awards to prominent Texas oil men. The names of these men are a closely-guarded secret until the presentations are made. These will also be a report of the nominating committee and election of new officers and directors.

Entertainment events will include a reception and buffet supper at the Dallas Petroleum Club, on Friday evening, October 9, golf privileges and a buffet luncheon at the Brook Hollow country club, on Saturday morning and the Texas-Oklahoma football game at the Cotton Bowl on Saturday afternoon. The Dallas Wildcat Committee, under the chairmanship of W. D. McBee, will be host to the visiting oil men on Friday evening and Saturday morning.

Many of the visiting oil men will play in the annual handicap golf tournament at the Brook Hollow country club on Saturday morning, in competition for the Hamilton Cup. This prize was won last year, at Beaumont, by Charley McCarthy, of Hydril Company, Houston.

D. R. Knowlton

D. E. Buchanan

Robert E. Wilson

Geo. Sawtelle

Maj. Gen. Richard Donovan

Lt. Col. D. B. Burns

power. Further he thought that it might be advisable to increase the tolerance to 10 percent instead of the present 5 percent and extend the time limit for balancing production from the present one week to the entire month. Culberson further stated that at least for the emergency confronting the industry, and particularly in the East Texas field, that some system of allocating the allowable of a well that has ceased to flow to the other wells on the same lease might be the answer to that problem.

Michigan Officials Ask OPC Spacing Exception

P. J. Hoffmaster, director of the Department of Conservation, acting on recommendation of the State Oil Advisory Board, has filed a request with the OPC for a blanket exception to M-68 to permit 20-acre unit drilling in six counties of Southwestern Michigan. The request stipulated that the exception should apply to wells only up to depths of 2000 feet, which is well within the range of Traverse-lime production, the only zone of consequence so far found in the shallow drilling belt of Michigan. The counties cited for exemption include Kent, Allegan, Van Buren, Kalamazoo, Ottawa and Barry.

The request also asked for approval of a spacing pattern of the "blank" type so that the "blanks" could be drilled after the war to fill out a regular 10-acre pattern. This was the first time that anything approaching official concern over wide spacing in Southwestern Michigan had come to light. Operators had opposed it from the start.

Hoffmaster also asked OPC to permit drilling of two wells, each in the center of a 20-acre unit, in the Reed City field, provided that one well is completed in the Traverse lime at 2900 feet and the other in the Monroe at 3600 feet. In effect, if the request is approved, it will permit drilling of leases developed since M-68 was handed down on the "blank" locations.

Committee to Study Secondary Recovery Laws

A special committee has been created by Mid-Continent Oil & Gas Association for considering legislation concerning secondary recovery in Oklahoma and Kansas.

The purpose of the group is to agree upon legislation acceptable to secondary-recovery enterprises, or to clarify the issues so that further consideration can be obtained. Present laws concerned with normal or primary recovery do not necessarily apply and in a number of instances it is apparent that secondary recovery effort has been of limited application in the field through inadequate legal recognition rather than through question of engineering procedure.

The first meeting of the committee has been called October 7 at Tulsa. At this meeting the committee will select its officers and establish procedure, according to advice from Burdette Blue, president of the Kansas-Oklahoma Division of the association.

As members of the committee, Governor Leon C. Phillips, Oklahoma, has appointed W. J. Armstrong, C. C. Peppers, T. Murray Robinson and L. W. Winkler. Governor Ratner of Kansas has appointed J. A. Robertson, Harold Medill, T. A. Morgan and Ralph Pryor. Independent Petroleum Association of America will be represented by D. A. Bartlett, Curtis F. Bryan, John Denman, Jr., J. Wood Glass, W. A. Heath, Carl Weiner and H. J. Whitehill. The Kansas-Independent Oil and Gas Association will be represented by Guy Berry, John Denman, Jr., Carl Weiner; while Kansas Stripper Well Association will have Guy Berry, W. J. Brundred, John Denman, Jr., Campbell Hogan, Parker Melvin, Don Oak, H. J. Walters and Carl Weiner on the committee. The Kansas-Oklahoma Division of Mid-Continent Oil and Gas Association has designated George Cunningham, Donald Campbell, R. B. F. Hummer, W. P. Z. German, C. V. Millikan, L. G. Owen, D. R. Snow, Dean Terrill, M. J. Kirwan, Alvin Richards, H. C. Arnold and F. E. Harper. The Oklahoma Stripper Well Association has named J. Wood Glass, Roy M. Johnson, J. B. Milam, D. G. Powell, John H. Rebold and H. J. Whitehill as committee members.

OPC Urges Line from Corpus Christi to Houston

J. R. Parten, Director of Transportation, Office of Petroleum Coordinator, has advised the Transportation Committee of District No. 3, by telegram, that a plan for converting a large gas line from Corpus Christi to Houston to handle crude petroleum and products should be developed and submitted at the earliest possible date, according to statement by J. A. Neath, chairman of a subcommittee appointed to study this project by the Transportation Committee of District No. 3. Parten advises that the conversion of such a gas line should not await a decision on the crude and products to be handled through the 24-inch War Emergency Pipe Line from East Texas to Illinois, since the line from Corpus Christi to Houston will probably be needed in any case.

The subcommittee of the transportation committee has been studying this project for several weeks and has already submitted a preliminary report, indicating two alternatives for handling 50,000-75,000 barrels daily of crude and products from Corpus Christi to the Houston area. Neath states that in order to facilitate successful conduct of these studies and formulation of definite plans, the Transportation Committee of District No. 3 has submitted a recommendation to OPC which provides for the appointment of a temporary pipe line management subcommittee and a temporary pipe line engineering subcommittee for District No. 3 to handle this and other projects related to supply for the War Emergency Pipe Line from East Texas.

Streamlined Program for Drilling Contractors' Meet

The Second Annual Meeting of American Association of Oilwell Drilling Contractors, to be held in Tulsa, November 19 and 20, will be featured by a streamlined program designed to discuss problems now confronting the drilling industry.

The first day's sessions will be devoted largely to committee meetings and an open session at which contractors will be able to speak in an informal manner. The second day will be devoted to papers and addresses on current industry problems. Two or three nationally-known persons will appear on the program.

Industry Told It Must Use Less Rubber

The oil industry can operate on approximately 25 percent less rubber, field equipment, and other necessary materials necessary to efficient operation under the recently promulgated lease-allowable plan, representatives testified at a meeting in Houston October 2.

The meeting, called by Mark McGee, state director of OPA, Dallas, was held for the purpose of discussing problems arising from tire shortages and possible ways to help alleviate the problem. More than 700 oil men, truck fleet owners, and representatives of other industries attended.

McGee asserted that OPA had given serious consideration to calling a state meeting of oil company officials to discuss a reduction of vital materials that go into operation of leases and fields. He said this is becoming necessary, and the point may be reached that unless some method is found to save on rubber and other field materials that some companies may be ineligible for new tires.

He made reference also to gasoline trucks that serve retailers in outlying districts. The time has arrived when one truck may have to serve this area instead of three, whose operations entail much more rubber and gasoline than is necessary.

In a discussion of the crude production lease-allowable plan from the floor, one company spokesman said that with the manpower shortage, which already has become serious in some places, and with tightening restrictions on rubber as well as retreads and recaps, it is simple arithmetic that much can be saved and the same general results achieved.

Warning that issuing of certificates for new tires will become increasingly stricter, McGee asserted "it is not a question of how many tires can I get, but how few can I operate on." Eligibility of a person or company for new tires does not mean necessarily that they will be available. He pointed out, however, that word has just been received that Texas has been alloted 20,000 recaps for October. This number is subject to change any time.

Products Line From Port Arthur Ready November 1

Magnolia Petroleum Company has awarded contract to Williams Brothers Corporation for the laying of a 12-mile 8-inch products line to extend from its Beaumont refinery to Port Neches, where it will connect with the Project 5 Pipe Line Corporation's products system to Helena, Arkansas. The latter is slated to be in operation by November 1, with 55,000 barrels daily capacity. It will embrace Gulf Refining Company's converted 8-inch crude line from Port Arthur to El Dorado and The Texas Pipe Line Company's reversed 8-inch carrier from Port Arthur to Bossier City (Shreveport). Fifteen miles of 8-inch is being laid from Bossier City to Benton to tap Magnolia Pipe Line Company's old 8-inch to El Dorado, giving two separate lines to El Dorado. Approximately 100 miles of the 155-mile 10-inch section from El Dorado to Helena terminal, is complete.

Markets • Statistics • Prices

Markets Reflect Shipping And Supply Shortages

Markets continue firm in all districts except the Gulf Coast, where deficiency of transportation still prevents sales and reduces inquiries. Especially strong are light fuel oil and kerosene, in both consuming and supplying districts, with inventories substantially lower than a year ago. Gasoline continues in somewhat reduced demand, in view of scheduled national rationing, although some refiners still are considerably behind with shipments of previously sold material.

In the East Coast district, markets for most products are steady, with gasoline probably less sought than other oils. While heating oil is eagerly taken, there is also strong demand for heavy fuels for immediate industrial consumption.

Western Pennsylvania refineries report no material stocks of gasoline, kerosine, or fuel oil, which are being largely marketed as produced, mostly for local consumption. Lubricants meanwhile continue in demand exceeding available supply, and prices are firm.

Middle Western refiners have not noticed any significant change in demand for gasoline following the revelation of plans for nation-wide rationing of that product, although a decline is anticipated. Heating oils continue in heavy demand, having been needed for immediate use in consequence of recent cold weather, as well as for storage.

Mid-Continent refiners remain unable to supply the heavy demands that they are encountering. Although heating oils are more urgently sought than other products, gasoline continues in strong demand in the district. There is less difficulty than formerly in obtaining tank cars for shipment to the East, but potential business cannot be handled because of the lack of adequate supplies of the petroleum products, many refiners saying that they have virtually no stocks to draw from. Both the transportation and supply scarcities were noticeably accentuated by the early appearance of cold weather.

The principal matter of concern for Gulf Coast refiners, as heretofore, is the lack of enough tank cars to take care of potential sales.

Hugoton Gas Hearing Held in Oklahoma

Ratable taking of gas from the Oklahoma side of Hugoton gas field was recommended by producers before the Corporation Commission of Oklahoma at a hearing September 29 at Oklahoma City. It was pointed out that of the 46 wells on the Oklahoma reserve, only 26 have been produced for market.

Ratable taking is the established practice in the Kansas sector of the field where a considerably greater number of wells produce for market delivery. OPC has recently stopped drilling in the field and has suggested improving the manner of allocating withdrawals. M-68 regulations have previously provided for the drilling of one well to each section.

Oklahoma Corporation Commission has taken presented evidence under consideration until after a similar hearing by Kansas Corporation Commission scheduled for October 14 at Liberal.

Inadequacy of Supplies Shown by Statistics

The industry continues to find it difficult to meet demands, as evidenced by latest statistics on stocks. In the week ended September 26, crude runs to stills were 89,000 barrels a day higher than in the previous week and within 6 percent of the rate in the like week last year. But it was necessary to take nearly 400,000 barrels of heavy-fuel oil from storage, and only a subnormal build-up of about 800,000 barrels was made in stocks of light-fuel oils, which soon will be needed in large volume. There was also a 332,000-barrel withdrawal of gasoline from storage, which indicated excess of demand over current supply, although the decrease probably was fully justified, in view of the plans for national rationing. Of significance, too, was the continued draft on crude stocks, reflecting the difficulty of obtaining adequate raw material, particularly from the specific districts where need-

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gas Oil & Distillate Stocks		Residual Fuel Oil Stocks	
	Bbls. Day (Add 000)	Week Ended	Bbls. Day (Add 000)	Week Ended	Bbls. (Add 000)	Week Ended	Bbls. (Add 000)	Week Ended	Bbls. (Add 000)	Week Ended	Bbls. (Add 000)	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	[4]4,120	10-18	266,187	3-29	99,727	3-29	[5]54,983	11-15	102,448	1- 4
1942	[4]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]107,229	3-14	49,357	1- 3	95,857	1- 3
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-21	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	80,870	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	244,294	9-19	80,356	9- 5	29,240	4-25	76,903	7- 4
Trends in 1942 (Week Ended):												
Jan. 3	4,038		3,961		244,440		92,987		49,357		95,857	
Jan. 31	3,871		3,848		250,740		97,810		40,674		91,189	
Feb. 28	4,016		3,675		259,373		105,635		34,547		88,285	
Mar. 28	3,820		3,667		263,208		105,624		31,756		83,045	
April 25	3,581		3,506		257,073		102,897		29,240		81,107	
May 30	3,877		3,522		255,023		95,355		31,384		79,628	
June 27	3,719		3,581		253,364		88,396		32,851		77,304	
July 25	3,691		3,658		249,262		82,281		35,966		77,816	
August 29	3,964		3,697		249,007		80,831		42,060		78,034	
September 5	3,683		3,656		246,942		80,356		42,819		78,267	
September 12	3,902		3,710		244,671		81,758		43,567		78,633	
September 19	3,936		3,713		244,294		80,882		44,442		79,335	
Sept. 26, 1942	**3,909**		**3,802**				**80,550**		**45,259**		**78,943**	
Sept. 27, 1941	4,060		4,031		[4]246,500		80,005		51,629		94,197	
Change:												
In week	—27		+89		—377		—332		+817		—392	
In year	—151		—229		—2,206		+545		—6,370		—15,254	
In year	—3.7%		—5.6%		—0.8%		+0.6%		—12.3%		—16.1%	

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, September 20, 1941.

Petroleum Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	[1]OPC Allocation in October	PRODUCTION IN WEEK ENDED	
		Sept. 26	Oct. 3
Arkansas	79,500	73,400	73,050
California	782,000	730,900	700,600
Long Beach		35,600	34,800
Midway-Sunset		58,200	57,100
Kettleman Hills		39,200	38,700
Wilmington		94,800	94,600
Rest of State		503,100	475,400
Colorado	7,000	6,600	6,775
Illinois	280,000	260,850	264,600
Salem		38,300	39,450
Louden		46,750	47,550
Other New Pools		163,700	165,550
Old Pools		12,100	12,050
Indiana	19,000	16,700	16,750
Kansas	294,000	296,900	282,700
Kentucky	13,800	11,900	12,100
Louisiana	337,200	331,600	325,850
North Louisiana		99,800	98,400
South Louisiana		231,800	227,450
Michigan	65,700	62,850	62,950
Mississippi	50,000	74,250	71,400
Missouri		130	130
Montana	24,400	22,250	23,150
Nebraska	3,500	3,450	3,300
New Mexico	101,100	98,600	97,200
New York	15,400	13,300	13,350
Ohio	11,400	9,350	9,500
Oklahoma	417,000	368,550	368,550
Oklahoma City		68,100	69,650
Seminole Area		87,450	86,900
Rest of State		213,000	212,000
Pennsylvania	50,800	52,500	50,500
Tennessee		30	30
Texas	[2]1,407,600	1,383,900	1,207,550
Upper Gulf Coast		326,450	281,950
East Texas Field		362,550	293,250
Rest of Eastern Texas		86,650	81,850
Lower Gulf Coast		98,950	84,950
Southwest Texas		48,600	41,250
South Central Texas		18,050	16,950
West Texas		217,350	183,300
North Texas		140,200	139,200
Panhandle		85,100	84,850
Utah		15	15
West Virginia	16,000	10,300	10,050
Wyoming	90,800	89,100	97,200
Total United States	4,066,200	3,917,425	3,697,300

[1] Production rates recommended for states by Office of Petroleum Coordinator, on basis of Bureau of Mines forecast of the nation's daily average requirements for domestic crude during month. State conservation authorities except Texas Railroad Commission have prescribed allowables calculated to hold actual production within OPC regulations. (Details on state allowables published in this issue of The Oil Weekly.)

[2] In general, Texas fields will be shut down on October 3, 4, 10, 11, 17, 18, 24, 25 and 31, but the number varies in different fields.

ed. Crude-oil storage contracted nearly 400,000 barrels in the week ended September 19, in extension of the steady withdrawals which have reduced inventories over 19,000,000 barrels since April 1 of this year, to a present total of 244,294,000 barrels, which is within 15,000,000 barrels of reaching a new low for the past 20 years.

Crude runs to stills averaged 3,802,000 barrels daily in the week ended September 26, the American Petroleum Institute reported. While up 89,000 barrels from the previous week, they were 229,000 barrels or 5.6 percent under the 4,031,000-barrel rate in the corresponding week last year. At the new level, the runs were at 79 percent of capacity, although the plants of the East Coast and the Southwest were at only 69 percent in processing 1,689,000 daily. Nevertheless, those districts largely accounted for the gain of the week, having stepped up daily runs by 98,000 barrels. A 54,000-barrel increase in California, to 753,000 daily or 92 percent of capacity, was offset by small decreases in the Appalachian, Middle Western, upper Mid-Continent, and Rocky Mountain districts, which operated at 91, 93, 84, and 69 percent of capacity, respectively.

Indicated production of gasoline, despite the increased runs, was off about 20,000 barrels daily, as plants outside the East Coast-Southwest districts apparently reduced yields of that product, in anticipation of widened rationing.

Stocks of gasoline were reduced between September 19 and September 26 from 80,882,000 to 80,550,000 barrels, a 332,000 barrel decrease, and the latter figure was 545,000 barrels above the total of 80,005,000 barrels reported for one year previously. As in the case of gasoline production, decreases were in the districts other than the East Coast-Southwest areas, which added to storage.

Despite concentration of the industry on the task of building up stocks of heating oils for fall-winter use, the 817,000 addition for the week of September 26 was less than normal for the time of year. The 45,259,000 barrels on hand as the week ended was 6,370,000 barrels (12.3 percent) under the total of 51,629,000 barrels held on the corresponding date last year. The week's increase was about normally distributed over the country with relation to demand, although the Rocky Mountain area showed a decrease.

Residual-fuel oil remains short. The 392,000-barrel reduction of stocks in the September 26 week left a total of 78,943,000 barrels, which was 15,000,000 barrels or 16 percent less than the 94,197,000 barrels held a year previously. California, which largely accounts for the year's draft on stocks, took 168,000 barrels more from storage during the week, while there were withdrawals also in all other districts except the Middle West, where a small addition was made.

Crude-oil production was even nearer year-ago levels than runs to stills, in reflection of relatively larger domestic production and curtailed imports. The wells of the United States put out 3,909,000 barrels daily in the week of September 26, only 151,000 barrels or 3.7 percent less than in the like week last year, when the output averaged 4,060,000 barrels a day. Producing materially less than a year ago are Oklahoma and Illinois, because of the natural decline of fields, while Texas, New Mexico, Louisiana, and Arkansas are producing slightly less, because of loss of markets. On the other hand, enlarged markets are drawing forth higher production than a year ago in Kansas, the Texas Gulf Coast, Mississippi, Michigan, Wyoming, and California.

The further decline of crude-oil stocks in the week ended September 19 reflected continued withdrawals in Illinois, Oklahoma, and California, while there were reductions also in the Appalachian district and Kansas.

Shutdown Exceptions

The Texas Railroad Commission has issued an order exempting West Conroe and Nichols fields from shutdowns during October. The shutdown schedule for Hoffman field was revised to provide that it will close down on October 3, 4, 10 and 11 only. It was formerly subject to the nine-day shutdown order.

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE (Cents a gal.)	Current Range		Changes from Month Ago	
Oklahoma Refineries:				
60 Octane and Under	5⅛	5¼	...	...
63-66 Octane	5½	5⅝	...	...
72-74 Octane	5⅞	6	...	...
80-82 Octane, Ethyl	6¾	6⅞	...	...
Mid-Western Tank Car:				
60 Octane and Under	5⅛	5¼	...	...
63-66 Octane	5½	5⅝	...	...
72-74 Octane	5⅞	6	...	...
80-82 Octane, Ethyl	6¾	7⅛	...	...
New York Harbor:				
68-70 Octane	9¼	9¼	...	...
72-74 Octane	9¼	10¼	...	...
Min. 80 Octane, '39 Research	9⅞	9⅞	...	...
Gulf Coast:				
60 Octane unleaded	5	5	...	...
65 Octane unleaded	5¼	5⅜	...	...
68 Octane unleaded	5¼	5½	...	...
70 Octane unleaded	5¼	5⅝	...	...
72-74 Octane leaded	5¼	6	+⅛	...
Min. 80 Octane, '39 Research	5½	5½	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	3⅝	3⅝	...	...
F.O.B. Br'kenr'ge, Tex.	3¼	3¼	...	...
KEROSINE				
Oklahoma Refineries:				
41-43 water white	4⅝	4½	...	...
42-44 water white	4½	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4½	4½	...	...
New York Harbor	6⅞	6⅞	...	...
Gulf Coast:				
41-43 water white	3⅞	4⅝	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅛	...	—⅜
In Mid-Western Market				
Group 3, basis	4	4⅛	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 prime white	3⅞	3⅞	...	—⅜
No. 1 straw	3⅞	4	...	...
No. 2 straw	3⅝	3⅞	...	—⅜
No. 3	3½	3½	...	...
Mid-Western Tank Car:				
No. 1 prime white	3⅞	4⅛	...	...
No. 2 straw	3⅝	3⅝	...	...
No. 3	3½	3½	...	...
New York Harbor:				
No. 1	6⅞	6⅞	...	...
No. 2	6¾	6¾	...	...
No. 3	6¾	6¾	...	...
Gulf Coast:				
No. 2	3⅜	3⅜	...	—⅛

HEAVY FUELS (Per Bbl.)	Current Range		Changes from Month Ago	
Oklahoma Refineries:				
No. 6	$0.80	$0.90	...	...
14-16 Gravity	.95	.95	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.80	.85	...	...
New York Harbor:				
No. 5	1.95	2.10	...	...
No. 6	1.65	1.65	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$0.90	...	...
New York Harbor	1.65	1.65	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.68	...	...
New York Harbor	2.78	2.78	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright stock (viscosity at 210°):				
200 vis. D, 10-25 pour point	.27	27	...	...
150-160 vis. D:				
0-10 pour point	23	23	...	...
10-25 pour point	22½	23	...	...
25-40 pour point	23	23	...	...
150-160 vis. E	22	22	...	..
120 vis. D, 0-10 pour point	22	22	...	...
600 s.r. dark green	8½	8½	...	...
600 s.r. olive green	10	11	...	...
631 s.r.	18½	18½	...	...
Neutral Oils (viscosity at 100°, 0-10 pour point):				
Pale Oils:				
60-85 vis. No. 2 color	8	8	...	...
86-110 vis. No. 2 color	8½	8½	...	...
150 vis. No. 3 color	14½	14½	...	...
180 vis. No. 3 color	15	15	...	...
200 vis. No. 3 color	15	15	...	...
250 vis. No. 3 color	16	16½	...	...
280 vis. No. 3 color	17	17	...	...
300 vis. No. 3 color	18	18	...	...
Red Oils:				
180 vis. No. 5 color	15	15	...	...
200 vis. No. 5 color	15	15	...	...
280 vis. No. 5 color	...	...	...	...
300 vis. No. 5 color	17½	17½	...	...
Western Pennsylvania:				
Cylinder Stocks:				
600 s.r. filtrable	15	15	...	...
650 s.r.	15½	15½	...	...
600 flash	16	16	...	...
630 flash	17	17	...	...

LUBRICATING OIL (Cents a gal.)	Current Range		Changes from Month Ago	
Bright Stock (No. 8 Color, 145-155 vis. at 210°, 540-550 fl.):				
10 pour test	30½	30½	...	...
15 pour test	29½	29½	...	...
25 pour test	25	25	...	...
Viscous Neutrals (No. 3 Color, vis. at 70°):				
200 (180 at 100), 420-425 fl.:				
Zero pour test	40½	40½	...	...
10 pour test	39½	39½	...	...
15 pour test	38½	38½	...	...
25 pour test	28	28	—2	—5
150 (143 at 100), 400-405 fl.:				
Zero pour test	38½	38½	...	...
10 pour test	37½	37½	...	...
15 pour test	36½	36½	...	...
25 pour test	26	26	—2	—5

CRUDE OIL PRICES UNCHANGED

Schedule of crude oil prices was unchanged during September, remaining as reported in THE OIL WEEKLY of July 6, 1942, pages 47-48.

MAJOR CRUDE OIL PRICE CHANGES

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....
Nov. 12, 1940	Up 15	.....	.....
Dec. 17, 1940	Up 15	.....	.....
Jan. 27, 1941	Up 15	.....	.....
April 1, 1941	.....	Up 5	.....
April 23, 1941	Up 10	.....	.....
April 24, 1941	.....	.....	Up *6
May 19, 1941	.....	Up 10	.....
May 21, 1941	Up 15	.....	.....
May 22, 1941	.....	.....	Up *6
June 18, 1941	Up 20	.....	.....
Aug. 14, 1941	Up 23	.....	.....
Aug. 25, 1941	Cut 23	.....	.....
March 26, 1942	Up 25	.....	.....

* Signal Hill 26 gravity.

U. S. Field Operations

Illinois Basin

Big Producer Completed In Hamilton County

Big producer completed in new Hamilton County pool. Devonian discovery in Boulder pool flowing 23 barrels an hour. Sixty-four first reports during week, an increase of 5 over preceding week, shoving total operations to 265, a gain of 30 over the previous 7-day period.

Hamilton County: Magnolia's Travis 1, E½ NW SE 20-4s-7e, 5 miles northeast of McLeansboro in the new Blairsville pool, flowed and swabbed 975 bbls of oil in 24 hrs from Aux Vases sand at 3272-3303 ft, one of the largest sand wells recently completed in Illinois. Texas Co.'s Minton 1, E½ SE NE 20-4s-7e, opened the field August 21 and was initialed at 43 bbls of oil and 4 bbls of water in 6 hrs from Aux Vases at 3295-3320 ft, following a 25-qt shot. Texas has one other completion in the pool, Ernst 1, E½ NW NW 21-4s-7e, initialed at 140 bbls of oil daily from Aux Vases at 3270-92 ft.

Clinton County: E. Frank Jones' Harrison 2, 2-2n-2w, discovery Devonian well in the Boulder field 4 miles northeast of Carlyle, was flowing 23 bbls an hour natural from pay at 2633-40 ft. Several other Devonian tests are planned for the area immediately.

St. Clair County: Activity on the west side of the basin is continuing. One of the most closely watched current wildcats in Mid-Sun Oil Co.'s Schneppe 1, SW NE 5-1n-8w, 4 miles north of Belleville, drilling at 1000 ft. The operators have staked location for another wildcat, 3 miles northeast of Belleville, Randle 1, SW NW 2-1n-8w.

Wabash County: C. E. Skiles' Wheatley 1, pool opener 4 miles northwest of Mt. Carmel, has been completed with an initial of 45 bbls daily on pump from Benoist sand at 2466-78 ft.

Jefferson County: Nash Redwine's Wilkerson 1, NW SW 27-3s-3e, 1½ miles southeast of the State Game Farm where the discovery well of the Mt. Vernon field was drilled, is testing Aux Vases and Lower O'Hara with about 1900 ft of oil in the hole.

Wayne County: E. V. Schulte et al's Morris 1, NE SW SE 11-1s-7e, northwest outpost of the Jeff pool, is testing McClosky lime.

Kentucky

Union County: Sun Oil Co.'s Highland Creek 1, NW NW SW 16-P-20, wildcat ½-mile east of Uniontown and 2½ miles from nearest production, set casing to test promising saturation in Waltersburg sand at 1822-55 ft, which on 45-minute drill-stem test showed 600 ft of oil, 300 ft of oil-cut mud and 100 ft of water.

ILLINOIS FIELD COMPLETIONS

Clay County: W. C. McBride's Hagen 1, se nw se 3-3n-7e, abnd 3015 ft.

W. C. McBride's Harrison-Hagan Comm. 1, se ne nw 3-3n-7e, Cyp 2597-2608 ft, 34 bbls, 2608 ft.

Pure's Kluthe 1, nw nw se 4-5n-7e, Cyp 2506-19 ft, 337 bbls, 2519 ft.

Texas Co.'s Nadler 3, nw nw sw 4-5n-7e, abnd 2868 ft.

Texas Co.'s Landwehr 3, ne nw nw 9-5n-7e, Weiler 2475-93 ft, 228 bbls, 2498 ft.

Results on Industry's Prospecting Fronts

Wildcat operations last week resulted in finding 8 oil wells among 54 completions. So far this year 2360 wildcat completions have added 298 new oil wells.

Gulf Coast: New gas field in Louisiana. Several Wilcox tests hold interest on Texas side. Edwards strike in Atascosa County starts drilling campaign.

North Texas: Strawn productive in Young County. Montague wildcat shows gas.

West Texas: Two deep wildcats projected in Crane County.

Mountain States: New production found in Northern Montana.

Edwards County: Tide Water's St. Ledger 1, c sw sw 18-1s-11e, McC 3164-85 ft, 6 bbls, 3265 ft.

Fayette County: H. Luttrell et al's Aukamp A-2, se nw ne 31-5n-3e, Bethel 1889-1910 ft, 65 bbls, 1910 ft.

Carter's Ivan Black 2, se ne ne 1-8n-3e, Weiler 1536-47 ft, 37 bbls, 1547 ft.

Carter's First State Bank 2, nw ne se 3-8n-3e, Bethel 1550-69 ft, Weiler 1449-85 ft, 250 bbls, 1582 ft.

Carter's Tucker 3-D, c ne nw 27-8n-3e, Dev 3124-27 ft, 144 bbls, 3127 ft.

Franklin County: Central PL Co.'s Kirk & Isaacs 1, se nw nw 1-6s-2e, Pt Crk 2573-98 ft, 165 bbls, 2598 ft.

Hamilton County: Pure's Mitchell Consol. 1, c se sw 31-5s-7e, abnd 3220 ft.

Texas Co.'s Hall B-5, nw se se 18-6s-7e, AV 3022-38 ft, 412 bbls, 3056 ft.

Texas Co.'s Smith 1, c w½ nw sw 35-6s-6e, abnd 3165 ft.

Jefferson County: Ohio's Lingle 1, c n½ se sw 36-2s-4e, McC 3064-73 ft, 513 bbls, 3089 ft.

Gulf's Gentle 1, c n½ nw sw 1-3s-4e, McC 3103-08 ft, 108 bbls, 3108 ft.

Madison County: M. D. Bryant et al's F. Meyer 1, sw sw sw 15-3n-6w, Trenton 2358-86 ft, 178 bbls, 2386 ft.

M. D. Bryant et al's Rhein 2, sw se sw 16-3n-6w, Trenton 2334-64 ft, 308 bbls, 2364 ft.

Marion County: C. E. Skiles et al's Barnhouse 1, c nw ne 28-1n-2e, abnd 2190 ft.

Markham Drilling Co.'s Leonard 3, c ne nw 16-1n-1e, Weiler 1629-39 ft, 5 bbls, 1668 ft.

Richland County: Sinclair-Wyoming and J. E. Bauer's All States 7, ne ne sw 22-2n-11w, Benoist 1754-71 ft, 15 bbls, 1772 ft.

Wabash County: Lewis Prod. Co.'s King 1, ne nw sw 16-1n-12w, abnd 2302 ft.

Texas Co.'s Steckler 1, c s½ se sw 8-1s-12w, abnd 2477 ft.

Wayne County: F. Jablonski et al's Totten-Shelton 1, c sw se 35-1n-8e, McC 3088-94 ft, 900 bbls, 3096 ft.

Pure's Sandlin Consol. 1, sw nw sw 35-1n-8e, abnd 3112 ft.

Hamm & Wright's Cisne 1, c e½ nw sw 8-1n-7e, abnd 3252 ft.

Dee Bros. et al's Fuhrer 1, c sw se 18-1s-7e, abnd 3323 ft.

W. C. McBride's Youngblood-Gregory 1, c sw se 19-1s-5e, AV 2868-93 ft, 221 bbls, 2893 ft.

Pure's Cravens A-3, c sw se 25-1s-6e, McC 3234-38 and 3242-46 ft, 221 bbls, 3265 ft.

Gulf's Robbins 1, c ne se 32-1s-6e, McC 3204-06 and 3209-13 ft, 327 bbls, 3217 ft.

Texas Co.'s Jones 2, c w½ sw nw 34-1s-6e, McC 3149-64 ft, 3202-15 ft, and 3216-20 ft, 278 bbls, 3220 ft.

Sohio Producing Co.'s Hanna-Louder Comm. 1, c ne ne 36-1s-6e, McC 3234-56 ft, 115 bbls, 3266 ft.

White County: Superior's Ford E-1, ne ne ne 34-4s-14w, AV 2824-44 ft, McC 2899-2902 ft, 2923-27 ft, 73 bbls, 2930 ft.

H. K. Riddle's Meyers 1, nw se sw 12-6s-10e, abnd 2110 ft.

ILLINOIS WILDCAT COMPLETIONS

Clay County—New Field: Big Chief Drlg. Co. et al's R. Barbee 1, sw sw se 35-5n-6e, McC 2790-99 ft, 216 bbls, 2887 ft.

Clay County—Failure: Texas Co.'s Wright 1, nw ne se 3-5n-5e, abnd 2544 ft.

Coles County—Failure: B. F. Williams et al's Browne 1, nw se se 36-14n-7e, abnd 1900 ft.

Effingham County—Failure: J. F. Doubet's Kyle 2, se sw nw 17-8n-6e, abnd 966 ft.

Jackson County—Failure: Central States Oil Co.'s Valentine 1, sw sw sw 34-7s-4w, abnd 1150 ft.

Jefferson County—Failure: Magnolia's Branson 1, c sw se 13-1s-4e, abnd 3069 ft.

Texas Co.'s Crouch 1, sw sw se 16-3s-3e, abnd 4759 ft.

Jefferson County—New Field: Oil Carriers' Mace 1, c ne se 33-3s-3e, Rosi 2771-2806 ft, 103 bbls, 2848 ft.

Madison County—Failure: Watkins Drilling

U. S. Drilling Operations in Week Ended October 3, 1942

STATE	ALL WELLS COMPLETED — THIS WEEK Total	Oil	Gas	Dry	*Miscel.	†Total 1942	Total this Date 1941	‡WILDCATS COMPLETED — THIS WEEK Total	Oil	Gas	Dry	Distillate	†To al 1942
Alabama	.....	.....	.....	.....	.....	3	2	.....	.....	.....	.....	.....	3
Arizona	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	2
Arkansas	.....	.....	.....	.....	.....	99	130	.....	.....	.....	.....	.....	14
California	15	13	.....	2	.....	555	862	2	.....	.....	2	.....	89
Colorado	2	1	.....	1	.....	12	14	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	.....	2
Illinois	47	26	.....	20	1	1,618	2,850	12	3	.....	9	.....	456
Indiana	6	1	.....	5	.....	294	401	2	.....	.....	2	.....	75
Iowa	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Kansas	27	15	1	11	.....	1,256	1,725	7	.....	.....	7	.....	276
Kentucky	2	1	.....	1	.....	113	246	.....	.....	.....	.....	.....	28
Louisiana	10	5	.....	5	.....	739	1,157	4	1	.....	3	.....	114
Michigan	17	6	1	10	.....	527	636	3	.....	.....	3	.....	135
Mississippi	.....	.....	.....	.....	.....	88	156	.....	.....	.....	.....	.....	30
Missouri	.....	.....	.....	.....	.....	23	59	.....	.....	.....	.....	.....	.....
Montana	16	5	8	3	.....	163	161	.....	.....	.....	.....	.....	.....
Nebraska	.....	.....	.....	.....	.....	28	68	.....	.....	.....	.....	.....	14
New Mexico	12	12	.....	.....	.....	314	288	.....	.....	.....	.....	.....	37
New York	29	16	1	1	11	964	757	.....	.....	.....	.....	.....	1
Ohio	22	3	11	8	.....	850	1,329	.....	.....	.....	.....	.....	.....
Oklahoma	22	5	3	11	3	1,108	1,689	8	1	1	6	.....	227
Pennsylvania	41	37	2	2	.....	3,086	3,070	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	8	16	.....	.....	.....	.....	.....	.....
Texas	81	45	3	30	3	4,314	7,989	16	3	.....	13	.....	854
Utah	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Virginia	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
West Virginia	13	1	10	2	.....	573	535	.....	.....	.....	.....	.....	.....
Wyoming	5	5	.....	.....	.....	78	109	.....	.....	.....	.....	.....	3
Total this week	367	197	40	112	18	16,818	24,257	54	8	1	45	.....	2,360
Total last week	363	196	47	94	26	16,137	23,575	52	6	.....	46	.....	2,306
†Total this year	16,818	8,681	1,434	4,360	2,343	.....	.....	2,360	298	36	2,018	8	.....

* Includes old wells deepened, water intake, gas input, salt water disposal, and distillate.
‡ OPC program calls for 4,000 wildcats in 1942, of which 624 should produce oil and 116 gas, leaving 3,260 dry.
† Revised.

Co.'s Ziegler 1, sw nw se 3-3n-6w, abnd 2479 ft.

St. Clair County—Failure: T. R. Kerwin's Harbough 1, nw ne sw 28-2s-8w, abnd 1396 ft.

Wayne County—Failure: Mabee O&G Co.'s P. C. Borah 1, c w½ nw nw 22-1s-9e, abnd 3487 ft.

Wayne County—New Field: V. A. Thompson et al's Whitlock 1, c w½ sw nw 9-1s-7e, AV 3130-48 ft, 100 bbls, 3320 ft.

OLD WELL DEEPENED

Coles County—Failure: C. E. Green's Pearl Link 1, nw ne ne 9-12n-14w, otd 1725 ft, abnd 2586 ft.

ILLINOIS WILDCAT STARTS

Scott County: F. L. Clapp's Lee 1, c w½ nw ne 34-13n-13w, dr.

Shelby County: Harvey H. Sims et al's Bauer 1, ne nw ne 21-11n-3e, lcn.

St. Clair County: Mid Sun Oil Corp.'s Rondle 1, c sw nw 2-1n-8w, lcn.

Wabash County: W. E. Bailor's Liddle 1, ne ne se 27-1n-13w, lcn.

White County: Sinclair-Wyoming's Ponter 1, sw nw ne 17-7s-9e, lcn.

INDIANA FIELD COMPLETIONS

Harrison County: Harrison Development Co.'s Holloday 1, c se se 4-6s-4e, abnd 2000 ft.

Spencer County: Miller & Shivarella's West 1, sw nw sw 33-6s-7w, abnd 1612 ft.

Sullivan County: J. H. Gilliam's Sinclair 1, c ne se 3-8n-10w, abnd 2572 ft.

Ohio's Hayden B-1, c sw sw 3-8n-10w, Dev 2392-2410 ft, 60 bbls, 2414 ft.

INDIANA WILDCAT COMPLETIONS

Dubois County—Failure: Detrick et al's Valentine Fleig 2, c ne se 9-3s-4w, abnd 368 ft.

Perry County—Failure: Steve Zanetis' American Cannel Coal 1, c w½ se 10-7s-3w, abnd 750 ft.

INDIANA WILDCAT STARTS

Knox County: W. C. McBride's Brevoort A-1, sw se ne of sec 1 in Lower Prairie Survey 39, 39-2n-11w, dr.

Perry County: Steve Zanetis' American Cannel Coal Co. 1, c w½ se 10-7s-3w, comp.

Posey County: C. E. Brehm's Laura Hardwick 1, se se se 12-8s-14w, lcn.

KENTUCKY FIELD COMPLETIONS

Daviess County: W. E. Hupp & Sohio Corp.'s Stevens 1, 13-N-29, Cyp 1364-73 ft, 22 bbls, 1373 ft.

Andrew Teller's Annie Ward 1, 6-N-32, abnd 980 ft.

KENTUCKY WILDCAT START

Daviess County: J. C. Miller et al's R. D. Payne 1, 24-O-29, drlg.

Oklahoma

Carter Wildcat Finds Unexpected Shallow Gas

Gas is being killed in a Carter County wildcat; Carter to deepen Creek wildcat; Peru sand showing for Central Oklahoma production.

Carter County: At his wildcat in the southeast corner of the county, Lloyd Noble is killing an unexpected flow of gas under heavy pressure in his Jolliff 1, 24-5s-1e. The well picked the production in Pennsylvanian sand, 2995 to 3075 ft, where a flow estimated in excess of 5,000,000 ft was encountered. Plans are to deepen well past this strata.

Creek County: Carter Oil's (was Leader Oil Company) Rippetoe 1, a wildcat in the deeper horizons at NWc SE 24-14-7e, in the Mifay-Arno sector, is preparing to drill ahead from 3605 ft.

In the same county, Zephyr Drilling's Sinclair 2, may prove an additional shallow producing zone for the North Bristow area where the firm's field test, SE SE NW 34-17-8e, is preparing to test shows in Peru sand, 2412-2436 ft.

OKLAHOMA FIELD COMPLETIONS

Okfuskee County—Okemah: British-American's Bloss 1, c sw sw 36-12n-9e, Gilcrease 3111 ft, pb to 3150 ft, shot 60 qts 3126-50 ft, flow 363 bbls, 4100 ft.

Pawnee County — Hallett: Mid-Continent's School Land 34, nw ne se 16-20n-7e, Tucker 2891 ft, pay 2899-2907 ft, shot 15 qts, pump 10 bbls, 2907 ft.

Pawnee County—East Watchorn: Alma's Robedeaux 1, sw ne se 26-23n-3e, Wilcox 3955 ft, flow 900 bbls 15 hrs, 3969 ft.

Payne County—Cushing: L. B. Jackson's Howard 1, c se nw 3-18n-6e, Skinner 2965 ft, perf 2973-86 ft, abnd 3346 ft.

Pottawatomie County—St. Louis: Hall & Graham's Woods 1, sw nw sw 32-7n-4e, rig, abnd.

J. F. Smith et al's John C. Beal 1, nw se sw 33-8n-4e, 2nd Wx 4485 ft, abnd 4491 ft.

Pottawatomie County—N. St. Louis: Stonewall's Coleman 1, c sw nw 22-8n-4e, rig, abnd.

Pottawatomie County—Semi-Wildcat: Herndon's Jarvis 1, nw sw ne 6-8n-4e, 2nd Wx 5115 ft, abnd 5135 ft.

Seminole County—E. Konawa: McIntyre et al's Osborn 1, ne ne se 11-6n-6e, Cromwell 2715 ft, pay 2725-33 ft, shot 15 qts, pump 24 bbls oil, 12 wtr, 4105 ft.

Stephens County—Woolsey: Fair & Bright's Peck 1, nw ne ne 1-3s-6w, sand pay 525-26 ft, sand pay 532-48 ft, pb 1202 ft, perf csg, 2,190,000 gas, td 1301 ft.

Fair & Bright's Peck 2, ne ne ne 1-3s-6w, lime 1172-1282 ft, perf, 5,218,000 cfg, td 1282 ft.

OLD WELLS DEEPENED

Kiowa County—Hobart: H. J. Sherman's Ratcliff 5, se nw ne 19-7n-17w, otd 1085 ft, lime 1027 ft, abnd 1315 ft.

Phillips' Warner 3, se ne se 19-7n-17w, otd 1151 ft, lime 1076 ft, pay 1220-26 ft, pay 1286-92 ft, 10,000 gals acid, pump 60 bbls oil, 30 wtr, 1292 ft.

H. J. Sherman's Watkins 1, sw sw nw 20-7n-17w, otd 1201 ft, opb 1100 ft, lime 1055 ft, pump 85 bbls oil, 40 wtr, 1201 ft.

OKLAHOMA WILDCAT COMPLETIONS

Alfalfa County—Failure: Olson Drlg. & H. M. Acre's Atchison 1, ne se se 12-24n-11w, Paw 3560 ft, Osw 5750 ft, Oread 4090 ft, Hoover 4250 ft, Tonk 4910 ft, Miss 6245 ft, Wood 6896 ft, Viola 7055 ft, Dense 7068 ft, Dolo 7115 ft, Sdy dolo 7179 ft, Wx 7210 ft, 2nd Wx 7279 ft, abnd 7300 ft.

Comanche County—Gas Field: Texas Co.'s Rolls 1, c se sw 5-3n-10w, spd 771 ft, Miss 1822 ft, Wood 1853 ft, Hunton 2284 ft, Syl 3442 ft, Top Viola 3828 ft, Simp 5321-45 ft, Viola 5345 ft, Simp 6008 ft, Green shale 6093 ft, Sdy zone 6131 ft, cored 6139 ft, 50,000 mcfg, cored 6240-50 ft, 2 ft hard shale, cored 6250-60 ft, sd & shale, cored 6260-70 ft, dr to 6269 ft, cored 6297-99 ft, pb to 977 ft, gas 887-917 ft, 4 mcfg, 440 lbs shut in pressure, comp as gas well.

Kay County—Failure: C. R. Moffett's Carroll 1, ne sw sw 24-28n-1e, temp abnd.

Lincoln County—Failure: T. N. Berry & Johnson O&R's School Land 1, ne sw sw 16-13n-5e, Hogs 2390 ft, Lay 2515 ft, Checkerboard 2780 ft, Osw 3590 ft, Prue 3602 ft, Verd 3710 ft, Skinner 3785 ft, Redfork 3985 ft, Bart 4085 ft, Miss 4475 ft, Wood 4715 ft, Mise 4766 ft, Hunton 4767 ft, 2nd Wx 5003 ft, abnd 5013 ft.

Noble County—Failure: O. M. Mason et al's Bunch 1, se ne ne 8-24n-3e, abnd 4228 ft.

Osage County—Failure: Mohican Drlg.'s Osage 1, nw ne ne 9-24n-6e, abnd 2922 ft.

Pottawatomie County — Failure: Herndon Drlg.'s Jarvis 1, nw sw ne 6-8n-4e, Paw 1330 ft, Belle City 2275 ft, Hogs 2720 ft, Mayes 4330 ft, Wood 4415 ft, Hunton 4525 ft, Syl 4730 ft, Viola 4820 ft, Dense 4880 ft, Dolo 4905 ft, abnd 5135 ft.

Seminole County—New Field: McIntyre et al's Osborne 1, ne ne se 11-6n-6e, Cob 905 ft, Cleve 965 ft, Wet 1550 ft, Calvin 1660 ft, Verd 2030 ft, Brn.ls 2635 ft, Booch 2710 ft, Uncon zone 2720 ft, Bew Crom 2730-51 ft, stain, Miss Caney 2030 ft, Mayes 3340 ft, Syl 3680 ft, Viola 3782 ft, Dense 3834 ft, Dolo 3885 ft, 2d Wx 4084 ft, perf 2725-32 ft, 24 bbls oil 12 wtr.

OKLAHOMA WILDCAT STARTS

Atoka County: H. F. Potts' Kinch 1, c nw sw se 18-3s-10e, lcn.

Creek County: Herbert Grussman's Lamons 1, se nw se 15-14n-9e, mim.

L. B. Jackson's Noble 1, c ne nw 3-19n-8e, pits.

Garvin County: Amerada's House 1, c se nw 2-1n-3w, spd 35 ft, dk.

H. L. Hurst's Parish 1, c se ne ne 11-3n-1w, c&n.

Jefferson County: Tom Medder's Trout 1, c nw nw ne 6-8s-7w, spd, dr 725 ft.

Kiowa County: E. M. Thompson's Baker 3, c n¼ n¼ nw 7-6n-18w, dr 1165 ft.

Lincoln County: Wilcox's Kolar 2, sw sw nw 8-12n-6e, lcn.

Murray County: J. W. Dutlon's Bristol 1, c nw nw sw 9-1n-2e, pits.

Noble County: K.G.F.F. & Portable's Horash 1, nw ne ne 22-22n-2e, rig.

Pawnee County: Alladin's King 1, c nw sw 2-23n-5e, digging pits.

Kansas

Ellis and McPherson Yield New Fields

New fields in Ellis and McPherson counties; Saline County well shows but not commercially; Simpson section under test in Barber.

Ellis County: Pryor and Lockhart's Krause 1, CE½ SE SW 17-14-19w, southwest of Hays, indicates a new pool in Gorham sand. Well filled 1350 ft from broken pay topped at 3798 and drilled to 3805 ft. Gravity was relatively high.

McPherson County: Westgate-Greenland Oil's Lilly 1, CS½ SW SE 30-17-1w, a wildcat 1½ miles south of Roxbury but separated from production by dry holes has an oil rise of 2450 ft from Mississippi chat topped at 2656 and drilled to 2662 ft. Well could prove an extension but more likely is new field.

Saline County: Duffield et al's Bigler 1, C SW SE 1-15-1w, when plugged back from dry lower strata to a sand tentatively identified as Burgess, 2592-2626 ft, at first showed as prospective pool opener but 5-bbl hourly production declined to zero and well has been plugged. While numerous shows have been encountered in this county, no well has completed commercially.

Barber County: Fair oil shows in Simpson sands were drilled at Great Lakes Carbon's Werner 1, wildcat east of Sun City field, SE SE 20-30-14w. Sand was drilled 4572-4580 ft where it was nitroed. Testing is incomplete.

KANSAS FIELD COMPLETIONS

Barton County—SE Kraft Prusa: Bartlett & Crum's Stantz B-1, nw nw sw 23-17s-11w, Arb 3297 ft, 2000 gals acid, 1270 bbls oil, 81 wtr, 3313 ft.

Barton County — Kruckenberg: Schermerhorn's Merton 1, c sw se 3-19s-15w, base sd 3582 ft, pump 234 bbls, 3590 ft.

Ellis County—Bemis: Cities Service's Hall J-1, nw ne nw 35-11s-17w, Arb 3535 ft, pump 256 bbls, 3575 ft.

Harvey County — Burrton: Carl Hipple's Martindale 5, c s½ nw se 18-23s-3w, Miss chat 3262 ft, pay 3356-60 ft, pump 75 bbls 18 hrs, 3364 ft.

Jefferson County—McLouth: McLaughlin's Miller 2, c w½ ne se 32-8s-20e, Miss lime 1463 ft, abnd 1535 ft.

Marion County—Lost Springs: Sunflower Oil Co.'s Myers 3, c w½ nw nw 26-17s-4e, Miss chat 2356 ft, pump 45 bbls, 2429 ft.

Ring-Mac's Henke 2, c w½ sw ne 4-18s-4e, Miss Chat 2372 ft, pump 264 bbls, 2385 ft.

Phillips County—Dayton: Tom Allen's Kaiser 1, c sw sw 25-2s-19w, Lans 3223 ft, 4500 gals acid, perf 3221-28 and 3240 ft, pump 7 bbls hr, 3346 ft.

Phillips County—Ray: Cities Service's States 2, sw sw se 30-5s-20w, Reagan 3627 ft, 1544 bbls, 3635 ft.

Pratt County—East Iuka: Skelly's Back 1, sw nw nw 7-27s-12w, Simp 4244 ft, top pay 4257 ft, 1000 gals acid, 1179 bbls, 4260 ft.

Rice County—Orth: Bay Pet. Co.'s Schultz 1, c w½ sw se 15-18s-10w, Congl 3235 ft, abnd 3280 ft.

Rice County—Smyres: Continental's Wendt 1, c sw ne 25-19s-6w, Chat 3416 ft, shot 50 qts, pump 428 bbls oil, 81 wtr, 3454 ft.

Rice County—Chase: McPherson Drlg. Co.'s Grizzell C-1, sw se sw 5-19s-9w, Lans 2893 ft, perf 2905-11 ft, 5000 gals acid, flow 75 bbls, 3317 ft.

Rice County—Silica: Tatlock's Bernstorf 2, c n½ sw nw 30-19s-10w, Arb 3318 ft, abnd 3333 ft.

Rooks County—Layton: Mark Field Oil Co.'s Baxter 2, c s½ nw se 2-9s-16w, Lans 3170 ft, pay 3179-84 ft, pay 3210-49 ft, 5000 gals acid, pump 87 bbls, 3255 ft.

Russell County — Hall-Gurney: Stanolind's Lipprand 1, nw nw nw 2-15s-13w, Lans 2946 ft, pb 2984 ft, 3000 gals acid, swab 8 bbls wtr per hr and trace of oil, abnd 3416 ft.

Russell County—Coralena: Stanolind's Letsch B-3, c s½ ne sw 4-15s-13w, Lans 2966 ft, 3100 gals acid, pump 221 bbls, 3004 ft.

Russell County—Gorham: Texas Co.'s Borell 3, c s½ se se 32-14s-12w, pump 276 bbls, 3172 ft.

Texas Co.'s Dumler B-1, c sw se 1-14s-15w, pump 26 bbls oil, 58 wtr, 3299 ft.

Sumner County—N. Vernon: E. B. Shawver's Callender 1, c sw sw 9-35s-2e, Miss lime 3537 ft, pay 3385-90 ft, pump 50 bbls, 3405 ft.

KANSAS WILDCAT COMPLETIONS

Barber County—Failure: Barbara O&G's Ott 1, c ne nw 22-33s-14w, Anhy 2010 ft, Topeka 3150 ft, Lans 3085 ft, Miss 4600, Viola 4941 ft, Simp 5093 ft, Arb 5193 ft, abnd 5226 ft.

Hodgeman County—Failure: Fain Drlg.'s Baldrey 1, sw sw se 4-23s-22w, abnd.

Jefferson County—Failure: McLaughlin's S. A. Miller 2, c w½ ne se 32-8s-20e, Oread 85 ft, B. Hertha 717 ft, McLouth 1395 ft, Miss 1463 ft, abnd 1535 ft.

McPherson County — Failure: Westgate-Greenland's Messinger 1, c s½ sw ne 5-18s-1w, Lans 2130 ft, Miss 2695 ft, abnd 2725 ft.

Marion County — Failure: W. McGinnis' Loveless 1, se se sw 12-19s-4e, Miss 2281 ft, Rust 2290 ft, B. Miss 2420 ft, Hunton 2475-79 ft, Viola 2610 ft, abnd 2640 ft.

Pratt County—Failure: Hannum et al's Taylor 1, nw nw ne 19-26s-13w, Anhy 810 ft, Topeka 3300 ft, Lans 3782 ft, Viola 4265

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ft, Mise 4321 ft, Simp 4430 ft, Arb 4519 ft, abnd 4580 ft.

OLD WELL DEEPENED

Reno County—Failure: Adair & Norton's Horsch 1, ne ne se 14-26s-5w, otd 4105 ft, abnd 3333 ft.

KANSAS WILDCAT STARTS

Butler County: J. J. Lynn's Vandenberg 1, sw se nw 35-27s-6e, rig.

Cowley County: Cities Service's Stout 1, sw ne ne 9-31s-6e, lcn.

Ellis County: Herndon's Schmeidler 1, se se sw 16-12s-17w, lcn.

Gove County: Sinclair-Prairie's Wallace 1, c s½ se se 22-11s-30w, dr 4065 ft.

Rocky Mountain Area

New Production Found In Northern Montana

New field for northern Monotana. Important deep test of Elk Basin, Wyoming, field stars. Wyoming well bails 15 bbls hourly from 278 ft.

Montana Opener: R. C. Tarrant's DeSteffany 1 C NW NE 30-28n-1w, Midway district, 8 miles west of Conrad, Pondera County, Montana, pumped 8 bbls of clean oil, 43 gr in 5½ hrs and is rated for 12 bbls daily. Production is from the Sunburst sand with saturation at 1725-45 ft. Sand, which is hard and tight, will be given a shot, and well retested. Tarrant's Wood 1, three quarters mile to southeast, currently drilling at 2317 ft, headed for deep test of Devonian, had slight show 42-gr oil in Sunburst at 1690-1720 ft. Two miles west of the Midway discovery, Tarrant is drilling Anderson 1, C NE SE 26-28n-2w, shut-down at 1440 ft in the Kootenai, topped at 1345 ft, waiting on casing. Heavy leasing play in the area follows upon the discovery. Tarrant is credited in part with the discovery of the Cut Bank field, and opened the small production on Mosser Dome, Southern Montana.

Elk Basin Test: The Elk Basin field, Northern Wyoming, and situated partly in Montana, which has produced upwards of 11 million bbls of light crude oil from the Frontier formation since 1916, and has been drilled no deeper than the Cloverly formation, which is gas productive at 2500 ft, is being tested for deep production by Minnelusa Oil Corp. in Henderson 1, NE NE NE 1-58n-99w, drilling at 2800 ft. Test is located on a fault block on the south end of the structure. Objectives are Embar, Tensleep and Madison, black-oil bearing.

Circle Ridge: Largest shallow production on record in the Rocky Mountain division is Continental's Shoshone-766 7, C EL SE NE 1-6n-3w, Circle Ridge field, Wyoming, which bailed 15 bbls of oil per hr from Embar lime at 170-278 ft, latter total depth. Well is a twin to Shoshone-766 3, which completed a year ago in the Tensleep at 395-660 ft for 191 bbls pumping after casing-off Embar production according to government regulations.

COLORADO COMPLETIONS

Rio Blanco County—Rangely: Equity Oil Co.'s Emerald 15, c nl ne ne 25-2n-103w, abnd 1845 ft.

United Oil Production's Green 4, nw nw sw 5-1n-102w, pump 20 bbls, Mancos, 900 ft.

MONTANA COMPLETIONS

Glacier County—Cut Bank: Glacier Production's Miller 11, c ne nw 29-33n-5w., swab 115 bbls, shot 80 qts, Lower Cut Bank 3072-86, td 3090, pb 3087, elev 3927 ft.

McDonald, Henderson & Overcash's Reichoff 1, se se ne 36-32n-6w, shot 240 qts, dry Lower Cut Bank, abnd 3110 ft.

Santa Rita's Kruger 1, c sw ne 23-37n-5w, pump 20 bbls, Sunburst 2577-83 ft, td 2608 ft, elev 3767 ft.

R. C. Tarrant's Scheffelin-Anderson 1, ne nw nw 31-32n-5w, pump 27 bbls, 3070 ft.

Fallon County — Cedar Creek: Montana-Dakota Utilities' 159, c sw 31-6n-61e, .4 ft gas, 184 lbs rp, Judith River 740-875 ft.

Montana-Dakota's 160, c sw 1-5n-60e, .396 ft gas, 172 lbs rp, Judith River 720-810, td 840 ft.

Montana-Dakota's 163, c sw 19-5n-61e, .260 ft gas, 180 lbs rp, Judith River 581-727 ft.

Phillips County—Bowdoin: Montana-Dakota's Davis 701, c se 10-32n-34e, .584 ft gas, 255 lbs rp, Bowdoin 785-845, Phillips 975-1015, td 1045 ft.

Montana-Dakota's Davis 702, c se 9-32n-34e, .584 ft gas, 225 lbs rp, Bowdoin 825-55, Phillips 1015-58, td 1100 ft.

Montana-Dakota's Davis 703, c se 8-32n-34e, .648 ft gas, 225 lbs rp, Bowdoin 823-80, Phillips 995-1045, td 1083 ft.

Montana-Dakota's Government 704, c se 6-32n-34e, .416 ft gas, 290 lbs rp, Bowdoin 855-915, Phillips 1025-70, td 1104 ft.

Montana-Dakota's Government 708, sw ne nw 7-32n-34e, .734 ft gas, 250 lbs rp, Bowdoin 735-995, Phillips 915-955, td 985 ft.

Toole County—Kevin-Sunburst: Nepstad Oil Co.'s Dipple 4, nw sw nw 28-35n-1w, abnd 1400 ft.

Casper T. Olen's Engemoen 13, ne sw nw 14-35n-2w, pump 10 bbls, 1628 ft.

Pfabe & Engleking's Danielson 2, c sl ne ne 20-35n-1w, pump 12 bbls, 1435 ft.

Texas Pacific Coal & Oil Co.'s Pewters 15, ne sw ne 21-35n-2w, abnd 1470 ft.

WYOMING COMPLETIONS

Big Horn County—Byron: Ohio's Canal 3, Lot 40-56n-97w, pump 325 bbls Tensleep 5217-5338 ft.

Hot Springs County—Grass Creek: Ohio's Mill Iron Cattle 74, c sl sw sw 20-46n-98w, pump 150 bbls, Embar-Tensleep 4171-4512 ft.

Fremont County—Circle Ridge: Continental's Shoshone-766 7, c el se ne 1-6n-3w, 15 bbls per hour, Embar, 278 ft.

Niobrara County—Lance Creek: Continental's Apex-4 6, sw nw nw 35-36n-65w, 72 bbls, Basal Sundance 4014 ft, td 4086 ft.

Park County—Oregon Basin: Husky Refining's Nielson 3, nw sw nw 33-51n-100w, pump 600 bbls, 1000 gals acid, Embar 3535 ft, td 3597 ft.

NEW MEXICO FIELD COMPLETIONS

Eddy County: Continental's State 2-36, c sw nw 36-16s-30e, flow 132 bbls, ¾-in natural, 2983-3025 ft.

Bert Aston and Fair's Stevens 1-B, c nw se 26-17s-30e, flow 768 bbls, ¾-in, shot 110 qts 3263-95 ft.

Barney Cockburn et al's Etz 11, nw se 35-16s-30e, flow 210 bbls, 2-in, shot 100 qts 3156-84 ft and 100 qts 2990-3041 ft, td 3184 ft.

Grayburg Oil Co.'s Burch 7-B, c sw ne 23-17s-29e, flow 215 bbls, 10/64-in, acid 3000 gals 2780-2881 ft.

Kersey & Co. et al's Creek 2-A, nw se nw 23-18s-30e, flow 50 bbls, 2-in, shot 80 qts 3260-79 ft.

Sanders Bros. et al's Leonard 5-E, c ne nw 4-17s-30e, flow 237 bbls, 2-in, shot 240 qts 2855-2932 ft, td 2936 ft.

Sanders Bros et al's Leonard 6-E, c nw nw 4-17s-30e, flow 59 bbls, 2-in, shot 290 qts, 2804-2900 ft, td 2950 ft.

Skelly's Dow 1-B, c ne ne 28-17s-31e, pump 24 bbls, acid 4000 gals 3504-3728 ft, td 4105 ft.

Geo. Turner et al's Wills 1, c se sw 13-20s-28e, pump 22 bbls, shot 40 qts 799-810 ft, td 908 ft.

S. P. and Martin Yates Jr. et al's Evans 1, c ne ne 5-17s-30e, flow 17 bbls ⅛-in, shot 160 qts 2675-2775 ft, td 2928 ft.

Lea County—Maljamar: Johnny Cockburn et al's Miller 5-B, c nw ne 25-17s-32e, flow 612 bbls, 2-in, shot 200 qts 4085-4200 ft.

Maljamar O&G Corp.'s Mitchell 13-B, c ne sw 19-17s-32e, flow 165 bbls, 3930-70 ft.

NEW MEXICO WILDCAT STARTS

Eddy County: Yates and Stroup's State 1, c sw nw 16-19s-30e, salt 387 ft, dr plugs 395 ft.

Lea County: Argo Oil Corp.'s State-Shilo 1, c se se 20-20s-35e, lcn.

An A.A.P.G. Book (1941)

POSSIBLE FUTURE OIL PROVINCES of the UNITED STATES AND CANADA

A symposium conducted by the Research Committee of The American Association of Petroleum Geologists, A. I. Levorsen, chairman. Papers read at the Twenty-sixth Annual Meeting of the Association, at Houston, Texas, April 1, 1941, and reprinted from the Association Bulletin, August, 1941.

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Edited by A. I. LEVORSEN

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The purpose of this symposium is to get an over-all picture of the undiscovered oil resources of North America, north of the Rio Grande. Ten geological organizations have participated, to the end that this survey has behind it the authority of many geologists representing state and national geological surveys, large and small oil companies, and consulting and independent geologists. A map and a section of geology, stratigraphy, and structure illustrate each province description.

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West Central Texas

Merkel Extension Showing for Good Well

Merkel pool extension showing for prolific well, and two confirmation tests for nearby Reddin pool checking favorable on upper markers. Wimberly field enlarged to northeast, and records new shallow oil pay, making it possible for area to continue as most active in district.

Taylor County: Fain-McGaha et al's Perry 1-B extended Merkel pool 1700 ft southwest, making initial head of 100 bbls of oil in 30 min after drilling main pay at 2573-75 ft, elevation 1785 ft. In Reddin area, Butler and Horne Drilling Co. et al's Frazier 1, west of discovery, was drilling at 2170 ft, and flat with producer. Partnerships Hudson 2, south offset to discovery, was drilling at 2010 ft, and 12 ft high.

Jones County: Fain-McGaha Oil Corporation's Butler 1, widened the Wimberly pool 1600 ft east and established new shallow pay in flowing 9 bbls of oil hourly natural from Tannehill sand at 2191-2200 ft. This zone is not productive infield, although it involves thick sand body. Merry Bros. & Perini's Winters 1, SW Lot 1, League 138, is a prospective 1800-ft north extension, having indicated production at 2361 ft in Upper Hope zone.

WEST CENTRAL TEXAS WILDCAT COMPLETIONS

Brown County—Failure: O. P. Leonard et al's Warnock 1, 2970 ft from nw and 330 ft from sw lines Ed. Trimble sur 169, abnd 1321 ft.

Coleman County—Failure: Anzac Oil Corp.'s Edington 1, 3967 ft from w and 500 ft from n lines Victoria CSL 187, elev 1698 ft, abnd 2765 ft.

Palo Pinto County—Failure: W. K. Gordon et al's Conway 1, near c of blk 11, Burleson CSL 1, abnd 3640 ft.

Shackelford County: R. H. Roark et al's Green 1-49, c ne sw T&P 49, blk 12, abnd 4760 ft.

Stephens County—Deeper Oil Zone: Fleming Oil Co.'s A. W. Corbett 4, 867 ft from n and 1700 ft from w lines sec 2, blk 3, SP Corbett sur, elev 1194 ft, Bend 3243 ft, Barnett shale 4385 ft, Ellenburger 4467 ft, pump 21 bbls, acid 500 gals Ellenburger 4545-55 ft.

Taylor County—Failure: Drl. & Exploration's Freeman 1, 1980 ft from s and 660 ft from e lines T&P 7, blk 18, elev 1936 ft, base Saddle Creek 2759 ft, abnd 3199 ft.

WEST CENTRAL TEXAS WILDCAT STARTS

Shackelford County: J. W. Keys et al's Andrews 1, 1405 ft from s and 660 ft from e lines ET 14, sp.

T. S. Stanfield et al's Todd 1, 1470 ft from n and 150 ft from w lines ne sec 11, Blind Asylum Lands, lcn.

West Texas

Two Deep Wildcats Projected in Crane

Southeastern Crane County prospect regionally high on Ordovician marker, and 2 projected deep wildcats assigned county by Gulf. Production test pending on first well in district to establish Delaware - Permian contact.

Crane County: Skelly Oil Co.'s Richardson 1, H&TC 5, Block 31, 2½ miles northwest of Girvin, had penetrated about 250 ft of the Simpson series in coring to 5480 ft, elevation 2341 ft. An unsuccessful drill-stem test was made of nominal shows in the upper Simpson. It is 7 miles north by west of the Wentz 2-well pool, where Ellenburger is reached near 4150-ft level.

Pecos County: Magnolia's Robertson 1, C NW SW T&StL 16, Block 142, 13 miles northwest of Fort Stockton, is installing cable tools to drill plugs from 7-in at 6475 ft to test prospective gas in Middle Permian at 6510-61 ft, elevation 2685 ft. This wildcat has apparently established the junction of the Delaware and Permian beds, having logged comparatively thin section of Delaware, then entered San Andres (Permian) at 4700 ft. Phillips Petroleum Co.'s Price 1, 28 miles southeast of Fort Stockton, was drilling lime at 4620 ft, and is contracted to 8500 ft.

Crockett County: A. J. Rife and Floyd Scott's Thompson 3 extended Soma-Noelke pool more than ¼-mile north with prolific flow from top of Yates sand at 1536-ft, elevation 2804 ft. Production test delayed pending erection of tankage.

Andrews County: Phillips Petroleum Co.'s University-Andrews 12, ¾-mile northwest of nearest Ellenburger production in Embar pool, entered Ellenburger at 8133 ft, elevation 3277 ft, being 370 ft low, and was awaiting drill-stem test at 8195 ft. Stanolind's University 1-W, ½-mile further north by east, was drilling chert at 8370 ft, with base of Permian at 7850 ft, elevation 3274 ft. Mid-Continent's University-South 1, 2 miles west of the south portion of the West Fuhrman pool, developed hole full of oil after removing cavings from 410-quart nitro shot at 4519-99 ft. Atlantic et al's University-Texu 1-A, wildcat, was drilling lime and shale at 9970 ft, with top of Simpson tentatively called at 9800 ft.

WEST TEXAS FIELD COMPLETIONS

Andrews County—West Andrews: Atlantic's University 2-A, c ne nw sec 12, blk 11, flow 95 bbls, plus 2 bbls water, 1-in, shot 420 qts 4280-4380 ft.

Andrews County—West Fuhrman: N. G. Penrose's University-Humble 1-A, c se se sec 3, blk 10, flow 122 bbls, 5/16-in, lime 4505-4630 ft.

Cochran County — Slaughter: Anderson-Prichard's Neal 7, 440 ft from n and 6124 ft from e lines lse, leag 57, Refugio CSL sur, flow 508 bbls cas, acid 20,000 gals and shot 50 qts 4972-95 ft.

T. P. Coal & Oil Co.'s Tarver 3, 440 ft out nec lab 15, leag 55, Oldham CSL, flow 1165 bbls cas, acid 10,000 gals 5004-55 ft.

Crockett County—Couch: Robt. B. Honeyman et al's Couch-Humble 1, 560 ft out nec e½ nw HE&WT 37, blk GG, pump 326 bbls, acid 1000 gals 2222-30 ft.

Gaines County—Cedar Lake: Stanolind's Bremont 5, c ne ne PSL 3, blk C-30, swab 149 bbls, shot 250 qts 4742-4823 ft, td 4830 ft.

Gaines County—Wasson: Mabee O&G Co.'s Willard 1-40, c nw nw PSL 40, blk AX, flow 620 bbls, 1¼-in, acid 9000 gals 4930-95 ft.

Hockley County—Slaughter: Geo. P. Livermore's Owens 2, 440 ft from n and 510 ft from e lines lab 98, leag 38, Zavalla CSL, flow 306 bbls, 2-in, acid 17,000 gals 4970-5020 ft.

T. F. Morrow et al's Mallet 5, 580 ft out swc lab 22, leag 48, Edwards CSL, flow 996 bbls cas, acid 12,000 gals 4955-5000 ft.

Morrow et al's Mallet 6, 580 ft from s and 510 ft from e lines lab 22, leag 48, Edwards CSL, flow 1127 bbls cas, acid 10,000 gals 4933-5000 ft.

Texas Co.'s Lucas 4, 554 ft from s and 3194 ft from e lines 372-ac lse, PSL 7, blk AX, flow 353 bbls, 2-in, acid 1500 gals 5000-33 ft.

T. P. Coal & Oil Co.'s Rains 1, 440 ft from s and 660 ft from w lines lab 11, leag 42, Rains CSL, flow 477 bbls cas, acid 10,000 gals, perf 4904-38 ft, td 4941 ft.

Pecos County—Walker: Cardinal Oil Co.'s University 1-E, 1010 ft from s and 2872 ft from e lines sec 13, blk 16, flow 90 bbls, 1-in, shot 50 qts 1875-86 ft.

Upton County—McCamey: Trebol Oil Co.'s Ricker-Humble 2, 1321 ft from ne and 3040 ft from nw lines sec 5, blk R, M. S. Denton sur, pump 281 bbls, acid 2100 gals 2109-2216 ft.

WEST TEXAS WILDCAT COMPLETIONS

Pecos County—Failure: Wm. Wolf-L. & W. Oil Co.'s University 1-D, sw sw nw sec 27, blk 16, abnd 1766 ft.

WEST TEXAS WILDCAT STARTS

Crane County: Gulf's M. Dawson 1-A, 1980 ft from nw and 660 ft from sw lines H&TC 10, blk 6, mim for Ordovician test.

Gulf's Estes 1, 1998 ft from s and 662 ft from w lines PSL 2, blk B-28, mim for Ordovician test.

Pecos County: Cardinal Oil Co.'s White-Baker 1-L, 2351 ft from s and 1650 ft from e lines GC&SF 90, blk 194, lcn.

TEXAS PANHANDLE FIELD COMPLETIONS

Carson County: Continental's Burnett 4-B, sw nw se I&GN 117, blk 4, abnd 3245 ft.

Skelly's Schafer 155, 440 ft out sec I&GN 196, blk 3, pump 331 bbls, shot 440 qts 3132-3212 ft.

Skelly's Schafer 156, 440 ft out swc 190, blk 3, I&GN, pump 490 bbls, shot 460 qts 3115-3200 ft.

PANHANDLE OLD WELL DEEPENED

Wheeler County: Smith Bros. Ref. Co.'s (was Post Dated Oil Co.) Sitter 1-E, ne ne sw H&GN 33, blk 24, otd 2110 ft, pump 15 bbls, broken pay 2390-2690 ft, td 2812 ft.

WEST CENTRAL TEXAS FIELD COMPLETIONS

Coleman County: Anderson - Prichard's Featherston 3, nec GH&H 52, blk 2, flow 315 bbls, ½-in, 3039-63 ft.

Comanche County: J. C. Hamer et al's M.

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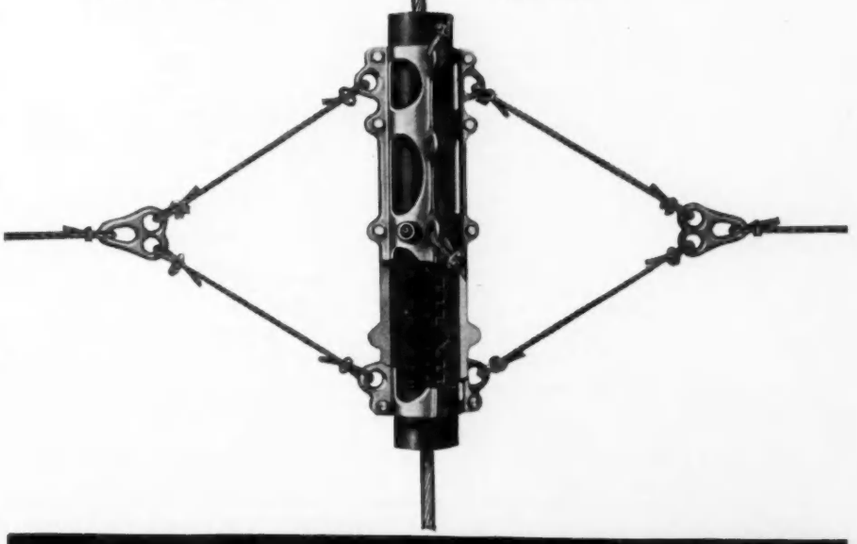

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Smith 3, 742 ft from s and 1440 ft from e lines BBB&C 31, abnd 798 ft.

Jones County: Cardinal Oil Co.-John Byram's Williams 1, e nw nw T&P 31, blk 18, flow 472 bbls, 8/64-in, Swastika 3080-84 ft.

Merry Bros. & Perini's Collins 2, 1320 ft from s and 330 ft from e lines blk 14, G. Martinez sur, elev 1688 ft, abnd 2169 ft.

Shackelford County: Roeser - Pendleton-Continental's Cook 8-A-118, ET 118, 200,000 gas, sand 1709-16 ft.

Roeser-Pendleton-Continental's Cook 17-A-117, ET 117, abnd 1546 ft.

North Texas

Strawn Oil Strike In Young County

Northeastern Young County records an oil discovery in Strawn, and gauge given Bend strike in west portion of county. Montague County wildcat showing gas, and another deep prospect is a failure.

Young County: A. G. Talbot and S. W. Robitaille's Ferguson 1, situated in most southeasterly corner of S. Tynes Survey, 5 miles northeast of Loving, filled hole with oil after drilling plugs from 7-in at 3420 ft, with production coming from Strawn sand at 3438-49 ft. Production test awaiting tankage. Standard of Texas and Hanlon-Buchanan's Daws 1, 11 miles west by south of New Castle, opened a new pool with flow of 111 bbls of oil and 225 bbls of water the first 24 hrs, then produced 37 bbls of oil and 140 bbls of water the next day, acidized 3000 gallons in Bend at 3846-60 ft.

Montague County: Sinclair Prairie's Henderson 2, twin to junked wildcat in Denver area, was showing production possibilities from Bend in plugging back by stages from 7766 ft. Perforations at 6065-75 ft in Bend, topped at 5706 ft, yielded hole full of mud then began showing gas. Tubing was set for production test. Company's Eanes 1, 6¾ miles southwest of Bowie, found Ellenburger dry at 6913-7070 ft, and 5½-in is cemented at 5993 ft to perforate promising oil saturation in Bend, topped at 5812 ft.

Continental's Ketchum 1, 2 miles east of Bowie, confirmed favorable structural position as forecast by geophysical and surface geology surveys, but proved dry in lower Pennsylvanian and Ordovician series, with Ellenburger at 7418-7506 ft. Hole will be plugged back to 3355 ft to test oil show in Strawn at 3335-45 ft.

Rogers Brothers Drilling Co.'s Glass 1, J. Wooten Survey and mile northeast of Bowers pool, Montague County, possibly opens a new pool with natural flow of 100 bbls of oil through casing in 3 hours from broken sand at 2935-46 ft, total depth 2954 ft.

Clay County: Roy Lee, Trustee's Conrady 1, northwest outpost for Watson pool, is awaiting test of oil saturation in Ellenburger at 6027-31 ft. Operators' Watson 1-A, second Bend producer for pool, almost qualified as commercial producer from Ellenburger. R. C. Lipscomb et al's Hapgood 1, west extension for Hapgood pool, developed water trouble after brief natural flow from Bend at 5973-83 ft, and has been plugged back to 5980 ft.

NORTH TEXAS FIELD COMPLETIONS

Archer County: L. T. Burns et al's Hasson 2, 1650 ft from n and 330 ft from w lines blk 165, Carson subdiv, abnd 1276 ft.

L. T. Burns et al's Hasson 3, blk 165, Carson subdiv, abnd 1307 ft.

Clay County: Wilder Drl. Co.'s Taylor 1, 3850 ft from se and 330 ft from ne lines blk

41, Bacon subdiv, pump 60 bbls, sand 1067-78 ft.

Cooke County: F. W. Merrick's McGeorge 1, 330 ft out nec 40-ac lse, B. Sullivant sur A581, abnd 2472 ft.

Cooke County—Walnut Bend: Sinclair Prairie's Atkins 11, 1450 ft from n and 330 ft from w lines 102.4-ac lse, blk 69, Fannin CSL, pump 288 bbls, Ramsey sand 4892-4902 ft.

Montague County — Gant-Turner: W. H. Gant et al's Brown 1, 660 ft out sec sec 58, G. E. Nabours sur, abnd 504 ft.

Throckmorton County: Humble's Parrott 2, 1665 ft from s and 1449 ft from w lines TE&L 957, Bend 4024 ft, abnd 4049 ft.

Wichita County: Martin Properties' Cooper 4-A, 2476 ft from e and 870 ft from s lines blk 5, Henry Hastie sur A-92, pump 61 bbls, 1302-20 ft.

Wichita County — K-M-A Ellenburger: Blackwell O&G Co.'s Hodges 9-E, 467 ft out swc of n-162 of 196-ac tr, W. H. Spillers sur, Ellenburger 4186 ft, flow 841 bbls, ¾-in, acid 5000 gals 4221-4300 ft.

E. C. Oil Co.'s Mangold 30-E, 613 ft from n and 467 ft from e lines s½ blk 34, P. Castleman sur, Ellenburger 4319 ft, flow 516 bbls, 2-in, acid 3000 gals 4325-80 ft.

Kadane-Griffith Oil Co.'s Kemp 1-B-E, 750 ft from n and 467 ft from w lines lot 3, blk 1, KWVFL sur, flow 1575 bbls, ¾-in, acid 3000 gals 4174-4260 ft.

Wilburger County — Consolidated: Consolidated Oil Co.'s Barnes 1-H, c nw sw H&TC 11, blk 7, K-M-A lime 3912 ft, Bend 3961 ft, Ellenburger 4286 ft, abnd 4358 ft.

Young County: Mid-Continent Pet. Corp.'s Lynn-Lisle 1, 622 ft from w and 700 ft from n lines of J. N. Lisle sur, Marble Falls 4006 ft, flow 6 bbls, acid 2500 gals 4006-19 ft, td 4084 ft.

NORTH TEXAS OLD WELLS DEEPENED

Montague County — Hults-Owens: Larry Hults-Tom Owens' Brite 1, 467 ft out sec TE&L 2820 ft, Bend 6036 ft, otd 6058 ft, abnd 6205 ft.

Wichita County—K-M-A: W. H. Bohner et al's 1st Nat'l Bank 3-A, 330 ft out sec lot 10, blk 26, KWVFL sur, otd 3715 ft, pump 19 bbls, acid 4000 gals and shot 800 qts, td 3862 ft.

NORTH TEXAS WILDCAT COMPLETIONS

Archer County—Failure: Bridwell Oil Co.'s Wilson 1-H, 990 ft from e and 330 ft from s lines ATNCL 71, abnd 1456 ft.

Throckmorton County—Failure: Eason Oil Co.'s Brockman 1, 990 ft from s and 1400 ft from w lines blk 75, Comanche Indian Reserve, abnd 763 ft.

Young County—Failure: S. D. Glover et al's Keathley 1, 990 ft from n and 330 ft from e lines TE&L 152, abnd 995 ft.

NORTH TEXAS WILDCAT STARTS

Clay County: Chester Clark et al's Mattie Chapin 1, 330 ft out nwc blk 86, Byers subdiv, lcn.

J. W. Culbertson et al's J. F. Johnston-Culbertson 1, 990 ft from n and 837 ft from e lines Kenneth McKenzie sur A-328, lcn.

W. H. Peckham et al's C. T. Taylor 1, 100 ft w and 1300 ft s of nwc blk 72, but in blk 73, Bacon subdiv, lcn.

Jack County: Gwynn and Overby-Hanlon-Buchanan, Inc.'s J. W. Kinder 1, 660 ft from w and 2000 ft from n lines 140.4-ac lse, J. P. Kemp sur, lcn 6400-ft test.

Montague County: L. S. Youngblood and R. L. Foree's C. E. Quillin 1, 1690 ft from w and 3490 ft from s lines F. J. Bellows sur A-32, lcn.

Young County: E. D. Willis et al's M. Killan 1, 800 ft from e and 330 ft from s lines TE&L sec 220, lcn.

East Texas

Second Producer for New Gas Field in Navarro

Second producer pending in new Navarro County gas pool. Adequate financial support pledged for deepening of Talco Smackover-lime failure to salt beds for geological information.

Navarro County: Lyman Davis et al's Walker 1, nearly half mile south by west of John Hooser's recent wet gas strike on the Bazette fault trend, was showing as on preliminary test through perforations at 3042-46 ft. Logged Woodbine at 2942 ft and gas sand at 3026-46 ft, elevation 368 ft, then cemented pipe on bottom at 3260 ft. Old dry holes forecast comparatively small producing area.

Freestone County: Ohio's Hill 1, Butler area, was drilling at 9890 ft, having topped massive anhydrite at 8960 ft, elevation 346 ft.

Wood County: Delta Drilling Co.'s Goldsmith 1, projected Lower Trinity test, was drilling at 3750 ft; Pecan Chalk 2485 ft, elevation 485 ft.

Cherokee County: Magnolia's Braly 1, Mixon prospect, drilling in upper Rodessa at 7960 ft, having topped Massive andydrite 7740 ft, 1678 ft high to Humble's small Pettit oil discovery at Larissa, situated 10.3 miles west by north.

Bowie County: P. D. Bowlen and Grady Vaughn's Sims 1, projected Smackover-lime test, was drilling Travis Peak at 6220 ft, remaining structually flat with Shell's Wall 1, a 6222-ft failure 5 miles east.

Franklin County: J. B. White et al's Jackson 1, Smackover-lime failure on north edge of Talco faulted field, fulfilled dept contract at 8785 ft, 200 ft in lime, and may be deepened for geological information.

Hopkins County: Clark Sample and Donnie's Welborn 1, 1½ miles southeast of Como, is awaiting orders after testing water in Paluxy at 6395-6420 ft, elevation 526 ft.

Wood County: Coke field recorded its 15th flowing producer with completion of Amerada's Kennemer 4, southeast edge well, flowing 36 bbls of oil hourly, ¾-in choke, from Paluxy perforations at 6294-6338 ft.

EAST TEXAS FIELD COMPLETIONS

Houston County—Lovelady: M.G.M. Oil Co.'s Lundy 1, 2750 ft from w and 4750 ft from n lines John Forbes sur, elev 289 ft, abnd 3821 ft.

Hunt County—Wieland (Club Lake): L. A. Grelling-Don Hugus' Graham 1-A, 1263 ft from s and 330 ft from e lines 110¾-ac lse, Chas. Hart sur, flow 215 bbls, ¼-in, Woodbine perf 2779-90 ft, td 2803 ft.

Stanolind's Wise 1, 54.29-ac lse, John Warren sur, flow 130 bbls, ¼-in, Woodbine perf 2764-80 ft, td 2800 ft.

Titus County—Talco: A. M. White et al's Lillianstern 1, 152-ac tr S. Brown sur, abnd 1089 ft.

Wood County—Hawkins: E. B. Germany et al's Christian Board 1-B, 330 ft from n line 68.2-ac lse, 467 ft from w line W. Burtch sur, flow 250 bbls, ¼-in, Woodbine perf 4738-4838 ft, td 4862 ft.

Humble's Slaughter 1-C, 467 ft out nec 40-ac lse, M. A. Esparcia sur, flow 378 bbls, ¼-in, perf 4771-78 and 4890-96 ft, td 4907 ft.

Southwest Texas

Imogene Discovery Rated As Biggest Strike in Area

Edwards lime discovery regarded as biggest strike of year in Southwest area, Atascosa County. Extension to Mayo field, Jackson County, completed.

Edwards Lime: Major discovery of year in Southwest Texas has been completed to open a new area to further deep drilling and exploration. Humble has made gauge on Thompson 1, wildcat in Imogene area of Atascosa County. The well flowed 123 bbls of 38.7-gr oil per day from Edwards lime topped at 7570 ft, producing from open hole at 7570-73 ft, total depth 7573 ft. Tubing pressure was 350 pounds with gas-oil ratio 750-1. No water has broken in, and the well cleaned up rapidly. Discovery of production in Edwards in this sector opens a new trend, also known as Updip Wilcox, to more wildcatting. The new well is considerably deeper than other Edwards production, and will result in wildcat along the trend being drilled deeper.

Operators have been assembling blocks and buying leases and royalty

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in area since the discovery. Plymouth Oil Co. is reported to have leased the Hienan ranch, 6 miles northeast of discovery. Humble's block contains approximately 60,000 acres. Other wildcats are due to be annouced in the area soon.

Jackson County: Louis Crouch has completed a major southeast extension to Mayo field with Lunday 1, north corner of A. Kountze survey 15, flowing 96 bbls daily through 5/32-in choke from 124 perforations at 5358-98 ft. Total depth is 6025 ft with 5½-in cemented at 5485 ft. Operators believe this well will lead to ultimate linking of Mayo and Harmon fields, since indications are that the fields are producing from the same structure. The fields run in a northeast-southwest direction.

Duval County: A new pay in Cadena area is indicated with Taylor Refining Co. recovering 275 ft of pipe line oil on a 25-minute drill-stem test at 4550-58 ft in a sand above the discovery Pettus pay. Test was made through ¼- and ⅜-in chokes, showing 35 pounds working pressure. Operators are making a test of Pettus at 5220 ft. The discovery pay was found at 5269-75 ft and produces 44.1-gr oil. The field is 2 miles southeast of Muralla field and 5 miles west of San Diego field.

LOWER TEXAS COAST FIELD COMPLETIONS

Jackson County—Ganado: Texas Co.'s Robertson-Ross 1, 660 ft fr n&el's 100-ac tr, Joseph Simmons sur, 5½-in 5867 ft, perf 5406-14 ft, 112 bbls, ⅛-in, td 6695 ft.

Jackson County—Edna: Whitman Drilling Co.'s Drushel 1, 675 ft fr nw & sel's of 93-ac tr, F. Rodriguez sur, 7-in 5925 ft, perf 4400-10 ft, 10,000 gas, ⅛-in, td 5940 ft.

Jim Wells County—Quinto Creek: Kilgore Developers' Schonvogel 1, 1275 ft fr nwl & 467 ft fr swl of 80-ac lse, ne portion of blks 7 & 8, Casa Blanca gr, 5½-in 5144 ft, perf 4870-72 ft, 1,000,000 gas, 15 bbls oil ¼-in, td 5144 ft.

Jim Wells County—Wade City: W. R. Quin's Welhausen 1, 330 ft fr nw & swl's of ne 40-ac of sw 133-ac of 193-ac tr in Welhausen & Driscoll subdvn, Casa Blanca gr, temp abnd 4900 ft.

Jim Wells County—Seeligson: Shell's Seeligson 11, 3175 ft fr nl & 4770 ft fr el of 990-ac lse of sec 48, R. P. Haldeman's subdvn, Willis Millican sur 335, 5½-in 6000 ft, perf 5982-98 ft, flow 149 bbls 7/64-in, td 6001 ft.

Sun's Canales 14, 660 ft fr nl & 1980 ft fr el of W. L. Dickson sur 180, 5½-in 6057 ft, perf 5237-41 ft, flow 100 bbls, 7/64-in, td 6072 ft.

Sun's Miller 6, 1980 ft fr w'ly & 660 ft fr s'ly sl of 919-ac tr, sec 65, Willis Millican sur 335, 5½-in 5989 ft, perf 5950-63 ft, 177 bbls, 7/64-in, td 6000 ft.

Kleberg County—Stratton: Humble's King Ranch-Paso Ancho, 660 ft fr wl & 1350 ft fr wl 1350-ac tr King Ranch lse, Paso Ancho de Abajo gr, 5½-in 6586 ft, sand 6572 ft, flow 143 bbls, ⅛-in, td 6612 ft.

Refugio County—South McFaddin: P. R. Rutherford's Fagin 2-D, 933 ft fr nl & 467 ft fr wl of 856-ac tr of 1685-ac tr in Nicholas Fagin sur, 5½-in 5716 ft, perf 5651-53 ft, flow 24 bbls 5/16-in, td 5762 ft.

San Patricio County — Midway: British-American's Mullen 2, 769 ft fr nwl & 763 ft fr nwl of 1802 ft fr swl of 160-ac lse, Coleman-Fulton Pasture Co. Lds subdvn, SA&MG 6, 5½-in 6136 ft, perf 6085-91 ft, flow 124 bbls, ⅛-in, td 6140 ft.

LOWER TEXAS COAST WILDCAT COMPLETION

Colorado County—Discovery: Shell's Schiurring 1, Buck Snag area, 1200 ft fr swl & 1469 ft fr sel of 279-ac tr, IGN 6, text. Warreni 4515 ft, Hockley 5077 ft, Ep Yegua 6081 ft, 4½-in 6198 ft, reperf 6140-45 ft, flow 100 bbls oil, 56 water, ¼-in, td 6997 ft.

LOWER TEXAS COAST WILDCAT STARTS

Colorado County: Cities Service's Stephens 1, Ramsey area, 1787 ft fr se & nel of 489-ac tr, P. K. Bartleson sur, lcn 10,000-ft Wilcox test.

Fayette County: Coastal Refineries & C. D. Miller's Faison 1, 660 ft fr n'ly nl & 440 ft fr most w'ly el & 800 ft nr nwl of 434-ac tr, Patrick Breedy One-Third lge, lcn 5760-ft Wilcox test.

Jackson County: Texas Co.'s Bonham 1, 3 mi sw Cordele field, 660 ft fr se&swl of 301-ac tr, John Andrews lge, lcn 5000-ft test.

Lavaca County: Shell's Neuhaus 1, Provident City area, 1980 ft fr s&el of HTB 1, 1496-ac lse, lcn 11,500-ft Wilcox test.

Live Oak County: Moore Development Co.'s Doebbler 1, Simmons City area, 660 ft fr n&wl 200-ac lse sec 76, 3000-ft test, drilling.

SOUTHWEST TEXAS FIELD COMPLETIONS

Duval County—Conoco-Driscoll: Continental's Driscoll 8-B, 1850 ft fr nl & 1450 ft fr el of U. Lott sur 484, 12,000-ac lse, 6-in 2998 ft, perf 2982-94 ft, flow 24 bbls, ¼-in, td 2998 ft.

Duval County—Government Wells: Magnolia's Harville 2, 330 ft fr n&el's of nw¼ of sw¼ of J. Poitevent sur 64, abnd 2598 ft.

Jim Hogg County — Colorado: Humble's Humble-Sun 1-B, 500 ft fr sl & 660 ft wl of 80-ac unit, Las Moretas gr, 7-in 3025 ft, sand 3041 ft, flow 167 bbls, 3/16-in, td 3052 ft.

Starr County—Rincon: Continental's Slick 62, 1303 ft fr wl & 1676 ft fr nl of 323-ac lse, CCSD&RGNG 221, abnd 4207 ft.

SOUTHWEST TEXAS WILDCAT COMPLETION

Duval County—Failure: Yegua Corp.'s Ruiz 1, 301-ac lse, 3½ mi se Kreis field, abnd 3677 ft.

SOUTHWEST TEXAS WILDCAT STARTS

Duval County: Circle Oil Co.'s Kreis 1, 660 ft fr n&el of s 240-ac of e½ of sur 76, 1 mi e Kreis field, lcn 4000-ft test.

Henderson Coquat's Southland 5-C, 660 ft fr s&el of 160-ac lse, Ball Ranch subdvn, Santos Flores gr, 5 mi sw Benavides, lcn 6000-ft test.

Magnolia's Duval County Ranch 1-305, 3 mi nw Colmena field, 660 ft fr s&wl of 320-ac lse, GC&SF 305, lcn 3000-ft test.

Jim Hogg County: Sun's Weil Bros. 2, 3330 ft fr n & 5940 ft fr el of 25,180-ac lse, Palitos Blancos gr, lcn 6000-ft test.

McMullen County: J. W. Gorman's Atkinson 1, 6 mi sw South Campana field, 1980 ft fr se & 660 ft fr swl of AB&M 125, lcn 2750-ft test.

McMullen County: Gulf's Nueces Land & Livestock 1, 1 mi n Munson field, 1980 ft fr sl & 660 ft fr swl James McGrain sur, lcn 8500-ft test.

Starr County: Sun's Laurel 1, 2½-mi nw Sun field, 1980 ft el of el of 100-ac tr, Arcadio Guerra gr, lcn 9000-ft test.

SOUTH CENTRAL TEXAS FIELD COMPLETION

Caldwell County—Bee Creek: Ralph R. Ogden's Tally 17, 2340 ft se alg sw'ly nel of

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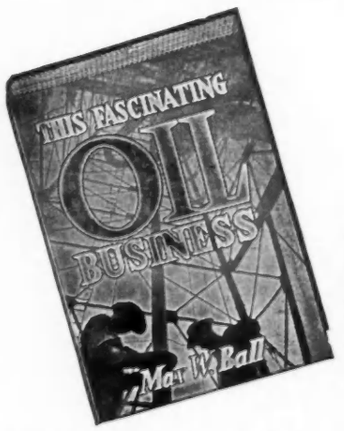

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SOUTH CENTRAL TEXAS WILDCAT COMPLETIONS

Dimmitt County—Failure: Humble's Denton 1, 9762-ac lse, John W. Lilly sur 528, abnd 8010 ft.

Gonzales County — Failure: Continental's Bruns 1, Lone Oak area, 330 ft fr sel & 60 ft fr swl 74-ac tr, Edwin Bruns tr, William Newman sur, abnd 8510 ft.

SOUTH CENTRAL TEXAS WILDCAT STARTS

Caldwell County: John A. Deering's Union Central 1, 918 ft ne alg se'ly sel of 222-ac tr fr e'ly s cor of same, 4 mi sw Lockport, lcn.

Gonzales County: H. H. Coffield's Harris 1, 660 ft fr n&wl of 80-ac lse, William Page sur 2, lcn 5200-ft test.

Texas Gulf Coast

Second Well Testing in North Bay City Area

Second well in North Bay City field testing with new location projected. Wilcox trend wildcats drilling ahead.

Matagorda County: Ohio Oil Co. is making second test on McDonald 2, second well in recently discovered North Bay City field. Well first was perforated in discovery sand at 7862-76 ft, but the flow was mostly gas and operators squeezed off the perforations to make a second test in same sand. On first test tubing pressure rose to 2800 pounds with 1650 pounds on casing. There was no salt water in the flow.

Wilcox Trend: Several wildcats on Wilcox trend are drawing interest as they near contract depths. George W. Strake is drilling and coring below 10,259 ft in Jones 1, in Willis area, Montgomery County. Although no details have been released, it is understood several small gas shows have been encountered. Strake is drilling and coring below 7850 ft in Peel 1, another Wilcox test near Montgomery townsite, Montgomery County.

In southern portion of Montgomery County, LaGloria Corp. is making hole below 11,000 ft in Grogan-Cochran 1, on Pinehurst prospect that has indications of opening a field. Details have not been released but when 10,300-ft contract depth was reached operators decided to drill several hundred ft deeper for a test of inner Wilcox sections.

TEXAS GULF COAST FIELD COMPLETIONS

Fort Bend County—Boling: Mackhank Petroleum Co.'s Farmer 1-B, 250 ft fr ne and 300 ft fr sel of 25-ac lse, James Scott lge, sand 4520-34 ft, flow 127 bbls, 10/64-in, td 4634 ft.

Hardin County—Saratoga: Rio Bravo Oil Co.'s Fee-T-50, 330 ft fr n&wl of R. Teel sur, abnd 2007 ft.

Jefferson County—Lovell Lake: Humble's Broussard 40, 1634 ft s fr ne cor th 3172 ft w at ra in 1653-ac tr, M. Grange sur, abnd 6833 ft.

Polk County—Livingston: Gem Oil Co.'s Kavanaugh & Collins 4, of 40-ac unit, 150-ac tr, A. Viesca 7-lge gr, 5½-in 6328 ft, flow 207 bbls ¼-in, td 8000 ft, opens Sparta production.

San Jacinto County—Mercy: Shell's Goldston 2, 580 ft fr se and 2247 ft fr nel of 418-ac tr, K. Holliday sur, A-157, 5½-in 8271 ft, perf 8254-70 ft, 168 bbls ¼-in, td 8272 ft.

TEXAS GULF COAST WILDCAT COMPLETIONS

Harris County—Failure: Hebert & Smith's Hutcheson 1, Cross Timbers area, 40-ac unit, Malcolm B. Terrell sur, A-772, abnd 4551 ft.

Montgomery County—Extension: Superior's Frost 1, 2½ mi ne Lake Creek, 600 ft fr most w'ly w and 800 ft fr s'ly nl of 1896-ac tr, A. Hodge sur, blew out on drill-stem test, 7-in 13,074 ft, perf 11,508-533 ft, flow 160 bbls 46.5-gr, 22/64-in, td 13,074 ft.

TEXAS GULF COAST WILDCAT STARTS

Matagorda County: Cities Service's Pierce 1, Blessing area, 85-ac tr, J. W. E. Wallace 23, lcn 9000-ft test.

Chambers County: Sun's Nemes 1, Seabreeze area, 880 ft fr e and 495 ft fr n&sl of 40-ac unit, T&NO 11, lcn 8950-ft test.

Louisiana Gulf Coast

New Gas Field Opened In Terrebonne Parish

Opening new gas reserve on Deer Island prospect, Terrebonne Parish. Pipe cemented in St. Landry Parish well.

Terrebonne Parish: Another gas field on Deer Island prospect is indicated with Humble completing Continental Land & Fur 1 as a gas producer from perforations at 9565-70 ft. While testing the well built up 3650 pounds pressure and had shut-in pressure of 4000 pounds. The well was shut-in immediately after testing, although no gauge was made of gas flow. Total depth is 11,470 ft, plugged back to 9578 ft. Tubing and packer were set at 9395 ft. A high-pressure salt-water sand was found while reaming at 11,468 ft. Operator is raising barge to drill another well in area, but location has not been announced.

St. Landry Parish: Gulf is preparing to drill ahead in Hirsch 1, wildcat on Krotz Springs prospect after cementing 9⅝-in pipe at 8222 ft, the total depth. A slight gas show was found around 7400 ft, the only one found so far. The test will be drilled to the Wilcox, expected 10,100 ft and 10,500 ft.

Two other wells in St. Landry Parish are active. Stanolind is drilling around 10,500 ft in Haas 1, wildcat on Palmetto prospect, Section 17-4s-6e. In the Shuteson area, Section 37-7s-4e, Sun is moving in rig to drill Burleigh 1, projected deep test.

Lafourche Parish: Texas Co. is building road for New Orleans 2, on east flank of Leeville dome, 520 ft north of New Orleans 1, which blew out recently from a new sand at 5200 ft and later cratered. It is in Section 26-21s-22e.

Gulf is reported to have found a little gas while taking a core at 1376 ft in upper Miocene in Delta Securities 1, wildcat in Camp Bully area. This well is projected to 2500 ft, the depth at which salt is expected.

SOUTH LOUISIANA FIELD COMPLETIONS

Iberia Parish—Vermilion Bay: Texas Co.'s Vermilion Bay 3-B, 14,005 ft s, 16,337 w se cor 2-15s-6e in bay 16s-5e, 5-in 10,746 ft, perf 10,720-735 ft, 227 bbls, 9/64-in, td 10,746 ft.

Lafourche Parish—Delta Farms: California Co.'s Delta Farms 9, begin nw cor sec 6, go s 1 deg 00 mins e 4081 ft th e 1941 ft to lcn in 6-17s-23e, 5½-in 9620 ft, perf 9585-94 ft, 289 bbls, ⅛-in, td 9620 ft.

Lafourche Parish—Leeville: Texas Co.'s New Orleans 1, 3163 ft e, 2595 n sw c 26-21s-22e, blew out, caught fire 5200 ft, cratered, abnd 5200 ft.

St. Charles Parish—Bayou des Allemands: Stanolind's St. Charles Land Co. 2, 4942 ft w, 1080 ft s ne c 15-15s-20e, 5½-in 10,040 ft, perf 9960-70 ft, 194 bbls, 10/64-in, td 10,529 ft.

St. Martin Parish—West Lake Verrette: Shell's Breaux 3-B, s 89 deg 25 mins w 2002 ft alg nl fr ne cor 22, th s 00 deg 15 mins e 512 ft in 22-14s-12e, abnd 12,217 ft.

Vermilion Parish — Gueydan: Pure's Alliance 12, 4009 ft n, 2154 w se cor 33-11s-1w, 5½-in 9727 ft perf 9688-9700 ft, 307 bbls, 217,000 gas, 10/64-in. td 9727 ft.

SOUTH LOUISIANA WILDCAT COMPLETIONS

Avoyelles Parish—Failure: Placid Oil Co.'s Hines Timber 1, sw cor 11-4n-6e, abnd 7311 ft.

Iverville Parish—Failure: Amerada's Angellos 1, Gross Tete area, 41-7s-10e, blew out 10,426 ft, caught fire, bridged, abnd 10,426 ft.

St. Charles Parish—Discovery: Gulf's Delta Securities 1, Bayou Couba area, 3400 ft s and 1980 ft w of ne cor sec 13-15s-21e, 5½-in 6912 ft, perf 6536-42 ft, 196 bbls, 9/64-in, tp 900, gr 36.1, td 6917 ft in salt.

St. James Parish—Failure: Cities Service and Skelly's Carstein 1, St. James prospect, 43-13s-16e, abnd 11,502 ft.

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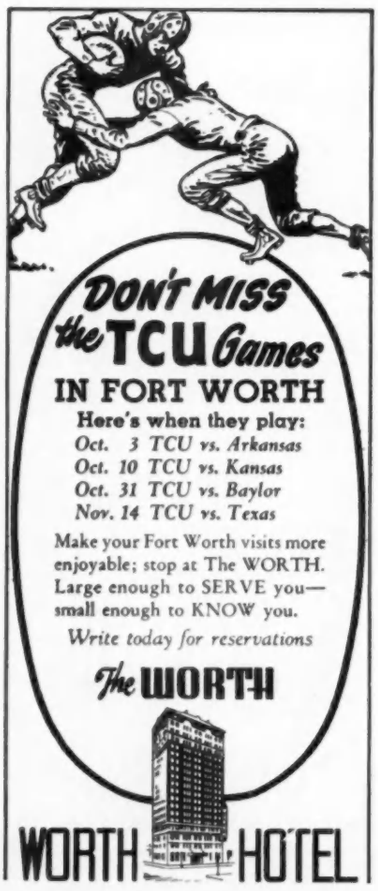
TRADING POST SECTION
Page 54 of this issue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California

Project Wildcat Play For Kern County Area

New wildcat play being prepared in McKittrick-Belridge area of Kern County. Exploratory projects at Dyer Creek-Jasmine area, and Edison area abandoned. Important extension completed in Cat Canyon field, Santa Barbara County.

Kern County: South of the South Belridge area and north of McKittrick in vicinity of 22-29-21, Independent Exploration Company has blocked up a number of leases to drill an exploratory well. Other units with acreage in the area may participate in the first project.

After topping granite at 4398 ft, Fred Jasper, Jr., has abandoned Jasper 1, wildcat in 16-26-27, Dyer Creek-Jasmine area, at 4421 ft. A few oil spots were reported at top of Vedder which was encountered at 3362 ft. Top of Walker was placed at 4163 ft.

M. T. M. Oil Co., Inc., has abandoned its No. 1 well, 23-30-30, Edison area, in gray silt at 2653 ft. No showings were encountered.

Santa Barbara County: Union Oil Co. of California has completed Bell 15, 35-9-33, Cat Canyon field, flowing at an initial rate of 1760 barrels, 21.9-gr through 48/64 bean. Producer extends proven area of field one mile to the southeast and topped the Monterey at approximately 4055 ft, showing location to be considerably up structure where zone shows more gas and indicates extension of field area to about double previously outlined limits. Gravity of oil compares with 14 and 16 gravity at other locations on company's Bell property.

CALIFORNIA FIELD COMPLETIONS

Kern County—Antelope Hills: Shell's Williams 34-6, 2277 ft s, 1756 e nwc 6-28-20, flow 376 bbls 16.5-gr, 23/64-in, 300/0 lbs, perf 2187-2343 ft, td 2355 ft.

Kern County—Belridge South: Belridge's No. 48-33, 592 ft n, 2066 e swc 33-28-21, pumped 50 bbls 13.5-gr, 775 ft.

Belridge's No. 58-33, 592 ft n, 2591 w sec 33-28-21, pump 60 bbls 14-gr, 775 ft.

Belridge's No. 58A-33, 260 ft n, 2259 w sec 33-28-21, pump 75 bbls 13.9-gr, 800 ft.

Belridge's No. 68A-33, 260 ft n, 1593 w sec 33-28-21, pump 65 bbls 14-gr, 775 ft.

Kern County—Coles Levee: Richfield's KCL-C 61-34, 308 ft s, 1652 w nec 34-30-25, flow 1229 bbls 34.2-gr, 129 ft perf 9300 ft, td 9328 ft.

Kern County — Midway-Sunset: Chanslor Canfield's G-20, 650 ft s, 1265 ft n¼ c 27-31-22, pump 10 bbls 14.8-gr, 487 ft perf 1149 ft, td 1295 ft, pb 1149 ft.

Kern County—Mount Poso: Chanslor Canfield's Mon 8, 1622 ft s, 2640 e nwc 26-27-28, pump 155 bbls 15.7-gr, 64 ft perf 1460 ft, td 1466 ft.

Kern County — Round Mountain: Shell's Freeman 22, 1174 ft n, 1149 e swc 20-28-29, pump 128 bbls 24.8-gr, 460 ft perf 1808 ft, td 1813 ft.

Los Angeles County—Brea Olinda: Shell's Orange 23, 753 ft n, 2750 w se lease c 2-3-10, pump 40 bbls, 396 ft perf 5245 ft, td 6379 ft, pb 5250 ft.

Santa Barbara County—Cat Canyon: Union's Bell 15, 330 ft s, 890 w n¼c 35-9-33, flow 1760 bbls 19.4-gr, 1-in, 120/540 lbs, 528 ft perf 5120 ft, td 5122 ft.

Santa Barbara County—Santa Maria Valley: Hancock-Bush's Hopkins 6, 330 ft s, 990 w e¼ c 25-10-34, flowed 1000 bbls, perf 3647-4647 ft, Miocene 3555 ft, td 4663 ft.

Ventura County—Ventura Avenue: Shell's Taylor 155, 379 ft s, 11,106 w c/l No. 11, flow 1925 bbls 29.5-gr, 128/64-in 225/500 lbs, 860 ft perf 8807 ft, td 8810 ft.

CALIFORNIA WILDCAT COMPLETIONS

Ventura County—Failures: Ventura Southern Oil Co.'s McCampbell G-1, 300 ft s, 200 w nec 19-3-19, Miocene 1600 ft, Valvulineria Californica 2625 ft, Sespe 4160 ft, Vaqueros 3500 ft, Modelo 2600 ft, Pico 1100 ft, sand showing oil 3220 ft, formation test 3973-4130 ft light blow, abnd 5353 ft.

Royalty Service Corp.'s Leonard 1, 1878 ft n, 6572 w c/l Ventura & Gonzales rd, cored hard gray sandy siltstone 3100-3126 ft, gray siltstone 7300-7313 ft, Lower Pico 7700 ft, abnd sand and shale 8417 ft.

Fresno County: Amerada's Clemente 72-22, 22-17-19, lcn, Riverdale area.

Amerada's Zanolini 36-23, 23-17-19, lcn, Riverdale area.

Orange County: Texas Co.'s Buena Park 4-F-1, 36-3-11, lcn, Anaheim-Buena Park area.

San Luis Obispo County: Chanslor Canfield's No. 25-1, 1-32-22, lcn, northwest Midway area.

Michigan

Three Dry Holes Make Evart Prospects Dim

Three dry holes limit Evart field in Osceola County, one of year's best prospects.

Osceola County: Failure of three defining tests to produce in the Dundee, only proven oil horizon so far developed in the Evart field appeared to limit the pool's productive area to 600 acres or less. Abandonment, however, was ordered only on Michigan Producer's Oren 1, N½ NE SE 27-18n-8w, ½ mile south of developed wells. Sun Oil Co. drilled the Dundee dry at Schoenhals 1, N½ SW SW 22-18n-8w, at 3863 ft, and ordered a plug-back to 3295 ft where casing will be set to test a Traverse oil show. Sun's Wirth 3, N½ NE SW 22-18n-8w, drilled Dundee lime dry at 3825 ft, 8 ft in the lime, but drilling will be carried ahead to the Richfield and Sylvania sections of the Monroe.

Sun abandoned Wirth 1, N½ NE SE 22-18n-8w, after deepening to 4457 ft where a fishing job developed that could not be cleaned up. It was the first attempt to drill the Sylvania in the field, a zone charted at a 5000-ft minimum.

Missaukee County — Aetna: New starts in Aetna Township, one of the newest prospects in the state, now being held up pending final outcome of test operations on Gordon Oil Co.'s Blue 1, 26-22n-6w, discovery well. Wildcat has been idle for six days following raising of 5-3/16-in. casing 10 ft to 3827 ft where it was cemented. Originally completed at 3844 ft the well flowed 183 barrels of oil in 19 hrs and then dropped to 35 bbls per day flowing and 67 bbls pumping.

Allegan County—Trowbridge: H. M. Gibb's Cook 1, SW NE SE 36-1n-13w, wildcat, carried 800 ft of fluid in 24 hrs from Traverse at 1365 ft and was to be acidized. Well is 5 miles east of the South Trowbridge field.

MICHIGAN FIELD COMPLETIONS

Allegan County—Allegan: R. E. Bradley's Adams 1, nw ne ne 27-2n-13w, Travers 1381 ft, water 1430 ft, abnd 1434 ft.

Arenac County—Clayton: Swanson Consolidated Oil Co.'s Metzger 1, se ne se 5-20n-4e, abnd 4005 ft.

Arenac County—Deep River: Arenac Oil & Gas Co.'s Parmalee 1, sw ne se 7-19n-4e, abnd 1557 ft.

Bay County—Kawkawlin: United Drillers & Producer's Pressler 1, n½ sw nw 28-15n-4e, Dundee 2842 ft, pay 2911-33 ft, pump and flow 66 bbls, td 2978 ft.

Gladwin County—South Beaverton: Sun's Doherty 1, e½ nw nw 35-17n-2w, Dundee 3877-83 ft, flow 143 bbls, td 3883 ft.

Missaukee County—Riverside: Taggart Bros. Co.'s Ward 58, c sw 21-21n-7w, abnd 1437 ft.

Taggart Bros. Co.'s Young 65, c ne 29-21n-7w, abnd 1415 ft.

Osceola County—Evart: Sun's Wirth 1, n½ ne se 22-18n-8w, Dundee 3824 ft, abnd 4457 ft.

Sun's Rohrer 1, n½ se ne 27-18n-8w, Dundee pay 3704-06 ft, flow 227 bbls, td 3706 ft.

Michigan Producer's Oren 1, n½ ne se 27-18n-8w, Dundee 3712 ft, 300 ft water 3752 ft, abnd 3754 ft.

Osceola County—Reed City: Ohio's Walker 2, n½ ne nw 8-17n-10w, Dundee lime, pump 26 bbls, 3549 ft.

Ottawa County—Zeeland: Perry et al's

Baron 1, se sw ne 31-5n-14w, Traverse lime, flow and swab 120 bbls, 1477 ft.

Montcalm County—Six Lakes: Belvidere Oil Co.'s Chipman 1, ne nw se 17-12n-7w, 4,100,000 gas, 1266 ft.

Van Buren County—Bloomingdale: H. C. William's Geldon 2, s½ nw sw 12-1s-14w, Traverse lime, swab 50 bbls, 1288 ft.

MICHIGAN WILDCAT COMPLETIONS

Allegan County—Failures: Sprenger Bros. Co.'s Pierce 1, s½ se nw 12-2n-12w, Traverse 1616 ft, dry 1667 ft.

H. C. William's May 1, w½ sw se 32-3n-11w, Traverse 1798 ft, dry 1855 ft.

Osceola County—Failure: Gordon Oil Co.'s Sprague 1, n½ sw nw 9-20n-7w, abnd 1715 ft.

MICHIGAN WILDCAT STARTS

Antrim County: E. B. Strom's Norton 1, nw se sw 30-31n-7w, rig.

Kent County: Jetter et al's Merrill 1, sw sw nw 23-6n-10w, rig.

Lake County: Lupher Drilling Co.'s Manistee Bank 1, ne ne sw 10-18n-12w, dr.

Ottawa County: Southwest Dev. Co.'s Long 1, ne ne sw 15-8n-14w, lcn.

Eastern States

NEW YORK

Allegany County: W. J. Richardson Est.'s No. 3, Gadsby farm, Bolivar, 8 bbls, Waugh-Porter, 1570 ft.

South Bolivar Oil Co.'s McKelvey farm, Bolivar, 7 bbls, Richburg, 1370 ft.

N. V. V. Franchot's Murphy farm, Bolivar, 6 bbls, Richburg, 1430 ft.

Putnam Oil Co.'s Birtoil farm, Wirt, 10 bbls, Richburg, 1436 ft.

Star Oil Co.'s Neff farm, Wirt, 7 bbls, Richburg, 1347 ft.

Bradley Prod. Corp.'s Rolls farm, Alma, 7 bbls, Richburg, 1360 ft.

J. P. Herrick's No. 1, Howe farm, Bolivar, 10 bbls, Richburg, 1419 ft.

L. H. Thornton et al's Fassett farm, Willing, 5 bbls, Fords Brook, 1255 ft.

H. W. Patterson et al's Browning farm, Scio, 6 bbls, Scio, 745 ft.

H. W. Patterson et al's Browning farm, Scio, 6 bbls, Scio, 732 ft.

Bradley Prod. Corp.'s Coats farm, Wirt, 8 bbls, Richburg, 1371 ft.

Robert Keller's Keller farm, Genesee, 8 bbls, Richburg, 1320 ft.

Messer Oil Co.'s Koehler farm, Clarksville, 8 bbls, Richburg, 1432 ft.

Sloan & Zook Oil Co.'s Green farm, Genesee, 7 bbls, Richburg, 1388 ft.

Wightman & Conklin's Wetherby farm, Clarksville, 6 bbls, Clarksville, 1366 ft.

Scott & Sackinger's Scott farm, Bolivar, 9 bbls, Waugh-Porter, 1432 ft.

Allegany County — New York Penn Gas Field: Empire Gas & Fuel Co.'s M. Lynch No. 2, dry, 4808 ft.

INTAKE WELLS

Allegany County: South Bolivar Oil Co.'s McKelvey farm, Bolivar, Richburg, 1344 ft.

Ebenezer Oil Co.'s Vincent farm, Scio, Richburg, 1145 ft.

Bradley Prod. Corp.'s Russell farm, Alma, Richburg, 1349 ft.

Messer Oil Co.'s "M", E. Allen farm, Alma, Richburg, 1372 ft.

Bradley Prod. Corp.'s Crandall farm, Alma, Richburg, 1140 ft.

J. P. Herrick's 1, Howe farm, Bolivar, Richburg, 1436 ft.

Trio Oil Co.'s Wetherby farm, Bolivar, Richburg, 1388 ft.

L. H. Thornton et al's Fassett farm, Willing, Fords Brook, 1278 ft.

H. W. Patterson et al, Black farm, Scio, Scio 890 ft.

Messer Oil Co.'s Koehler farm, Clarksville, Richburg, 1426 ft.

Shamrod Oil Co.'s Frost farm, Genesee, Richburg, 1352 ft.

Pure Penn Oil Co.'s Gowdy farm, Scio, Richburg, gas, 1325 ft.

OHIO COMPLETIONS

Ashland County: Ohio Fuel's Ailer 1, abnd 2789 ft.

Ohio Fuel's Mosher 2, 0.74 gas, 3031 ft.

Athens County: Hines & Radcliff's Barnhill 1, 1.5 gas, 1774 ft.

Cuyahoga County: L. F. McGrath's Fisher 1, 0.4 gas, 2646 ft.

Holmes County: Ohio Fuel's Baum 1, abnd 2974 ft.

Knox County: Upham Gas Co.'s Fry 1, 0.15 gas, 2972 ft.

Preston Oil Co.'s Earlywine 1, abnd 3042 ft.

Licking County: Ray Penick's Banks 2, 0.1 gas, 2740 ft.

Mahoning County: Tri-County Oil & Gas Co.'s Calvin 1, 2 bbls, 460 ft.

Meigs County: Proffit et al's Taggart 1, 0.01 gas, 3446 ft.

Downie et al's Steele 1, 0.07 gas, 779 ft.

Monroe County: Roy Newhart et al's Kochler 1, abnd 1596 ft.

Morgan County: Bern Oil & Gas Co.'s Ohio Agricultural Society 1, 0.77 gas, 942 ft.

Muskingum County: Atha Oil's Krofft 2, abnd 3540 ft.

Noble County: J. T. Watson's Groves 2, 1.3 gas, 750 ft.

Perry County: H. M. Nelson's Entsminger 1, abnd 715 ft.

Industrial Gas Corp.'s Woods 1, 0.35 gas, 3454 ft.

Industrial Gas' Humberger 3, 220 bbls, 2705 ft.

Stark County: Obermiller Bros.' Conrad 1, 0.7 gas, 4755 ft.

Washington County: Consolidated Drlg. Co.'s Ward 1, 25 bbls, 1525 ft.

R. W. Patterson et al's Oliver 2, 0.04 gas, 1118 ft.

Wayne County: Ohio Fuel's Ewing 1, abnd 3202 ft.

PENNSYLVANIA COMPLETIONS

Allegheny County: Equitable Gas Co.'s Maurer 3846, abnd 2815 ft.

Clarion County: Owens Illinois Glass Co.'s Yearney 1, abnd 3254 ft.

Greene County: L. J. Houze Convex Glass Co.'s Dunham 1, 3.5 gas, 1547 ft.

H. D. Freeland et al's Wise 1, 0.09 gas, 3349 ft.

Washington County: G. Freshwater Co.'s Koethe 2, 5 bbls, 1160 ft.

WEST VIRGINIA COMPLETIONS

Barbour County: Hope Nat. Gas Co.'s Segley 8612, 0.44 gas, 4557 ft.

Brooke County: Wheeling Steel Corp.'s Fee 33, abnd 1340 ft.

Calhoun County: So. Penn Nat. Gas Co.'s Rothlisberger 7, 0.59 gas, 1870 ft.

Clay County: Pittsburgh & W. Va. Gas Co.'s Elk River Coal Land Co. 7868, 1.13 gas, 2026 ft.

Gilmer County: Pitts. & W. Va. Gas Co.'s Rohr 7885, 0.64 gas, 2128 ft.

Jackson County: United Fuel Gas Co.'s Pfost 5112, 17.58 gas, 5038 ft.

United Carbon Co.'s Williams 1056, 3.19 gas, 5187 ft.

Columbian Carbon Co.'s Parrish 1, 1.61 gas, 5242 ft.

Mason County: Point Pleasant Oil & Gas Co.'s Lansford 1, abnd 3415 ft.

Putnam County: Eastern Gas Co.'s Easter 3, 0.07 gas, 2375 ft.

Ritchie County: Richards & Hartman Oil & Gas Co.'s Robinson 1, 3 bbls, 2016 ft.

Taylor County: Pittsburgh & W. Va. Gas Co.'s Mason 6126, 0.15 gas, 981 ft.

Wayne County: Southeastern Gas Co.'s Fuller 795, 3.32 gas, 1425 ft.

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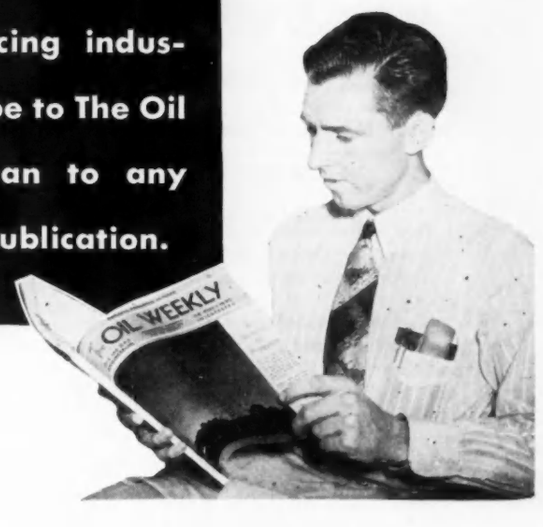

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Men in the Industry's News

JAMES ANDERSON, former director and vice president and treasurer of Humble Oil & Refining Company, has been commissioned a lieutenant colonel in the Army Specialists Corps and will be in charge of personnel procurement in Houston, the War Department announced last week. His appointment was sent to the Senate for confirmation by President Roosevelt. Anderson will be principal procurement officer for Eighth Service Command, and his headquarters will be in Houston.

A native of Rockville, Maryland, Anderson was elected president of Humble Pipe Line Company, February, 1920. He was elected vice president and director of Humble Oil & Refining Company in charge of crude-oil purchases and sales February 15, 1921. He was named treasurer in addition to his other duties on August 1, 1941. He retired from his position with Humble in April of this year.

T. C. McCOBB, controller and director of Standard Oil Company (New Jersey) was elected president of the Controllers Institute of America at that group's 11th annual national convention, held recently in Chicago. McCobb has been affiliated with Standard Oil Company since 1928, and has been its controller since 1933. Before that he was secretary-treasurer of Imperial Oil, Ltd., of Sarnia, Ontario. He has been a director of the Institute since 1939.

CAPTAIN ALBERT PRANGER, formerly sales manager of the oil tool division of The Guiberson Corporation, is now stationed at the Dallas office of the Chemical Warfare Service of the United States Army. With Guiberson since 1935, Captain Pranger served as chief engineer until 1937, prior to the time he became sales manager.

C. L. Forcum, who has been connected with the company since 1936, is now in charge of sales for the oil tool division.

JOEL A. LIPSCOMB of Philadelphia has accepted an appointment by the State Department to be petroleum advisor to the government of Paraguay and is now en route to Asuncion, that country's capital, to take over his new duties. In order to accept the appointment, Lipscomb was released from the legal department of The Atlantic Refining Company with which he has been connected for the last 20 years. Lipscomb joined the Atlantic legal staff in Mexico. Prior to that time he had been a practicing attorney in San Antonio where he represented foreign interests in Mexico.

H. F. "BLACKIE" CLARK has returned to Houston from Corpus Christi, and now is superintendent of both the Texas-Louisiana Gulf Coast and Southwest Texas areas for Halliburton Oil Well Cementing Company.

DONALD M. DAVIS of The Pure Oil Company was elected president of Houston Geological Society October 1. Carl B. Richardson of Barnsdall Oil Company was elected vice president, while W. L. Horner of Core Laboratories was named secretary with William F. Calohan of British-American Oil Producing Company being elected treasurer. Those elected to the advisory committee were John C. Myers, independent; W. B. Milton, Jr., Gulf Oil Corporation, and W. B. Moore, The Atlantic Refining Company.

D. M. DAVIS

L. W. BENNETT, vice president and treasurer of Sunray Oil Company, was elected president of Petroleum Accountants Society of Oklahoma September 24. He succeeds F. T. Anderson of Darby Petroleum Company. Also elected were J. B. Galbraith, Stanolind Oil & Gas Company, first vice president; E. D. Loughney, Gulf Oil Corporation, second vice president; E. W. Stewart, Amerada Petroleum Corporation, secretary-treasurer, and M. A. Wilson, Cities Service Oil Company, Bartlesville, director.

LEON E. SCHROEDER, division superintendent of motor transportation for Mid-Continent Petroleum Corporation, Tulsa, entered naval service as a reserve officer October 1.

JOE S. BLACKMAN, former deputy conservation officer for Oklahoma, stationed at Tulsa, is a graduate of the Army air school at Miami Beach.

FLOYD L. SWINDELL, Vapor Recovery Systems, Tulsa, has resigned to enter the Treasury Department's income tax division as an evaluation engineer.

C. N. KIRKPATRICK, vice president and general manager, has been appointed president of Landis Machine Company, Waynesboro, Pennsylvania. Kirkpatrick will continue his duties as general manager. G. M. Stickell, sales manager, has been advanced to vice president to succeed Kirkpatrick, and will also continue as sales manager.

THE FAIRFIELD (Texas) RECORDER, home-town paper of Bill Boyd, president of the American Petroleum Institute, in its issue of September 10, proposes Bill as a likely candidate for Vice President of the United States. Freestone County, home of the Fairfield Recorder, is Boyd's favorite spot and apparently Bill is Freestone County's favorite son.

D. L. PARISH, representative of S-M & Company, Houston, has returned from a visit to the factory af Shand & Jurs Company, Berkeley, California.

J. E. (BRICK) ELLIOTT has been commissioned a major in the Army Specialist Corps. He will be stationed in Atlanta.

A. T. GLOVER, superintendent of the Oklahoma division of Magnolia Pipe Line Company, has been transferred from Oklahoma City to Dallas headquarters, to become general superintendent, a newly created position.

A. T. Glover

Experience in pipe line station construction won Glover a job with Magnolia on two occasions. He was a resident of Neodesha, Kansas, when called upon by the late Superintendent Dave Stewart to help erect the company's Corsicana main-line station in January, 1912. He took part in the installation of three other stations between Electra and Beaumont, then returned to Kansas in April, 1913, to work briefly for Prairie Pipe Line Company and Standard Oil Company of Kansas. Returning to Texas in April, 1914, he re-entered Magnolia's service, serving as construction and concrete foreman. In 1923, he was transferred to Burbank, Oklahoma, as district superintendent, and was serving in this capacity at Wewoka when he was appointed Oklahoma division superintendent with headquarters at Oklahoma City.

O. M. Joy, Wewoka district superintendent, succeeds Glover at Oklahoma City. Oklahoma pipe line activities have been consolidated into two districts with V. L. Red, Oklahoma City, and H. M. Van Buskirk, Healdton, superintendents of North and South Oklahoma districts, respectively.

LAWRENCE H. FAVROT, president of Latex Construction Company, Houston, has been commissioned captain, Army Engineers, George A. Peterkin, vice president of Latex, is a lieutenant in the Air Corps, commissioning of the two leaving Latex without directing officers. The company will lie dormant for the duration, its office, equipment and personnel being taken over by the partnership of Sharman and Allen. J. W. Sharman and Earl Allen, partners in the new enterprise, are former superintendents of the company.

ENSIGN DENNY C. IVEY, former assistant petroleum engineer for the United States Geographic Survey, has been appointed to the officer's staff of the new naval training school for Diesels at University of Missouri, Columbia.

M. L. HAYS, production foreman for Selby Oil & Gas Company in the East Texas field, was seriously injured September 24 while working alone in a lease pump house. He is at a Gladewater hospital.

GEORGE CALVERT, vice president of Broderick & Calvert, Inc., Fort Worth, has become president, succeeding the late Al G. Broderick. Other officers are: Mrs. Elizabeth Broderick, vice president; and Miss E. L. Newsome, secretary-treasurer.

JESSE K. HUGHES, 78, organizer and board chairman of J. K. Hughes Oil Company, died September 27 at Mexia, Texas, where he had resided since 1920. He participated in the early development of the Mexia field and other Woodbine strikes that followed, giving a liberal portion of his wealth to church and educational institutions.

W. O. KING, 46, secretary-treasurer of Elko Oil & Gas Company, died at Tulsa September 22.

LEE C. MOORE, 89, inventor and manufacturer of oil-field equipment, died September 24 in Tulsa. Moore moved his manufacturing plant to Tulsa in 1922, having previously established the firm in Pittsburgh.

Much credit in the development of the tubular steel derrick goes to Moore. A native of Ohio, his first job was with an iron company in New Jersey. He later was with Cooper-Hewitt Company and the Frick & Lindsay Company. Moore was a member of American Society of Mechanical Engineers. He disposed of interests in the company bearing his name some years ago.

LEICESTER C. COLLINS, 62, died September 23 in Tulsa. Collins, president of Westland Oil Corporation at the time of his death, was born in 1880 in Brooklyn. After graduating from Yale, he worked in the East, saw service in the last war and took residence in Tulsa in 1920, establishing the corporation during the same year.

Squeaks from the Bull Wheel

Road Advice

"Where does this inviting shady lane lead to?"

"It's led mor'n half the young folks around these parts into a right smart heap o' trouble."

Modern Myths

"I read in a book that Apollo was chasing a nymph and she turned into a tree."

"He was lucky. Those I chase always turn into a night club or a restaurant."

Emily Post

"Should evening dresses ever be worn to bridge parties?"

"No; in playing cards it is only necessary to show your hand."

Oh Doctor!

"Is your wife going to have an operation for appendicitis?"

"Not that I know of. Why do you ask that?"

"While waiting in Dr. Gonzalez's office yesterday I heard her through the door, telling him to cut it out."

Comparisons

An American soldier in England was giving some illustrations of the size of his country. "You can board a train in Texas at dawn and 24 hours later you'll still be in Texas."

"Yes," said one of his listeners, "we've got trains like that here, too."

Saves Time

Junior Senator: "I've noticed that when anybody comes around with a new theory, you always endorse it. Why is that?"

Senior Senator: "I'd rather endorse it than have it explained to me."

Convicted

"Well," said the Colonel, "what do you want a two-weeks furlough for?"

"My wife is very sick," said Pat, "and the children are not well, and, if you don't mind, I'd like to give her a bit of assistance."

"I might grant your request, but I got a letter from your wife saying she didn't want you home; that you raised the devil whenever you are there. She hopes I won't give you any more furloughs."

"I suppose I won't get any furlough."

"I'm afraid not."

"Colonel, could I say something?"

"Certainly."

"You won't get mad?"

"Certainly not, Pat. What is it?"

"I want to say, Colonel, that there are two splendid liars in this room, and I'm one of them. I was never married in me loife."

End of a Friendship

"Do you know, dear, my hubby says I look 10 years younger in this hat."

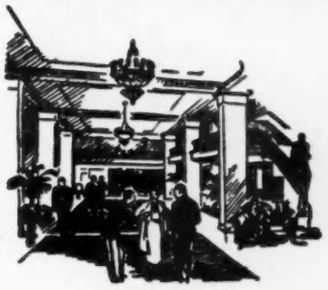
"Really! How old are you?"

"Thirty."

"No; I mean without the hat."

—Tit-Bits.

In LOS ANGELES



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HOTEL
CLARK

Nearest downtown hotel to HOLLYWOOD

WITH the movie capital of the world and western America's radio city within the borders of Los Angeles, entertainment reaches its zenith. Gay nights, laughter and life; sunny days filled with thrills and excitement. In the center of everything is situated the HOTEL CLARK at Fifth and Hill Streets. A hotel where you will enjoy hospitality to its fullest extent; where you will find your every wish anticipated. Whether you stay in Los Angeles for a few days or a month, choose Hotel Clark, downtown in the heart of things.

555 Rooms with Baths from $2.50

"Famous for Good Food from Coast-to-Coast"

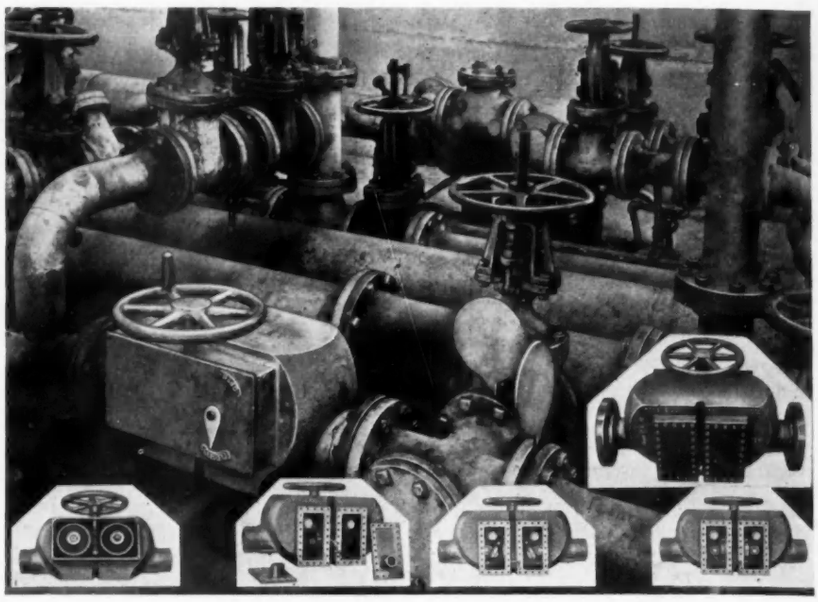
Notes for the Equipment Buyer and User

Partition Valve

HAMER OIL TOOL COMPANY

Hamer Oil Tool Company, 2919 Gardenia Avenue, Long Beach, California, has announced a new partition valve, designed to effect a permanent, positive shut-off under pressure with one-man operation. The valve replaces the customary gate valves with slip blank blind between them used in refineries, gasoline plants, and other pipe-line applications.

The Hamer double seal partition valve consists of a single body containing two opposed valve members which close against seats situated in a central partition. Both members are synchronized and raised or seated simultaneously through powerful worm gearing operated by a single hand wheel. The operating gears are sealed in a compartment separated from the valve chamber and are packed in grease. The gearing permits quick, easy opening of the valve under pressure and also insures tight contact of the valves and seats when closed. An external indicator shows whether the valve is open or closed. A small bleeder drains the space in the partition between the valve seats to provide a positive check of the shut-off when the valve is closed.



Hamer Double-Seal Partition Valve

Advantages claimed for the double seal partition valve are: that it can be installed in existing hook-ups, releasing the two gate valves and slip blank for service elsewhere; that in new installations, this single unit streamlines the manifold, conserving space and reducing the amount of new equipment needed. In both cases, this valve eliminates all time and labor required in blinding lines and avoids the waste and fire hazards caused by spilling fluid. Maintenance costs and line shut-down time are reduced to the minimum, and shop repair is eliminated because new valve members and seats can be installed quickly and cheaply while the partition valve is in the line.

The valve members are designed for a double sealing action, having both metal-to-metal contact with the ground surfaces of the seats, and neoprene squeeze-tight pressure seals. The valve members swing to and away from the seats, eliminating "wire-draw."

As this valve is operated by one hand wheel which closes both valve members equally and at the same time, the possibility of one valve being left partly open is avoided.

The fluid passage through the Hamer partition valve is a straight-through, oversize round opening, providing sufficient clearance for all line-cleaning devices such as spinners, scrapers, swabs, etc. The valve may be used in any position desired, can be operated by remote control such as extension rods or electric motor, and can be used at temperatures from below 0 to as high as 850° F.

Chain Belt Company of Milwaukee, Wisconsin, was presented the Army-Navy "E" in ceremonies September 19. The production award was accepted by John T. Brown, vice president, after presentation by Lieutenant Colonel D. J. Martin. J. C. Merwin, president, gave the address of welcome. The "E" lapel pins were presented by Captain D. D. Dupre, and accepted by D. M. Mackie, representing Chain Belt Company employes. Julius P. Heil, governor of Wisconsin, made the principal address.

Maritime Commission Award Given to American Hoist

The United States Maritime Commission's award of merit has been presented to the American Hoist and Derrick Company, St. Paul, Minnesota, for outstanding achievement in war production. The presentation was made at St. Paul September 18.

Bailey Meter Company Opens More West Coast Branches

Bailey Meter Company, Cleveland, Ohio, has announced the appointment of L. F. Richardson as branch manager of its newly established Los Angeles office and H. T. Sawyer as branch manager of its newly established Seattle office.

Richardson and Sawyer had previously been located in Los Angeles and Seattle but had functioned as representatives of the San Francisco branch office.

V. A. Rumble, manager of the com-

Life extension for oil field boilers

Information supplied by "The Oil Weekly"

Damage frequently occurs in moving oil field boilers from location to location. Much of it is avoidable.

Take all precautions to prevent strain which might distort the plates. Avoid careless use of chains and jacks, taking special care against using the dome as a lifting instead of a stabilizing point.

Chains and lines passed around the barrel or fire box are satisfactory, provided the entire boiler is free to move and undue leverage on any part is not required. Attempts to pull the boiler horizontally so that it may be raised vertically later should be avoided especially when the chain or cable is attached to the back end.

Lack of support at either end of the boiler, when the other end is not properly supported, may place a strain on the mid-section. Lines or hooks connected to boiler attachments invite trouble; lines run carelessly through handholes or manholes are safety hazards.

In moving a boiler a considerable distance its supporting points should be about the same as at a battery. And, finally, never drop a boiler even a few inches when unloading.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.
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pany's San Francisco branch office, continues as West Coast supervisor.

Oil Property Valuation

"Oil Property Valuation" is the title of a current book written by Paul Paine, Los Angeles, and published by John Wiley & Sons, New York. Containing 204 pages the book has chapters dealing with the scope of valuation, properties, on proved lands, oil and gas reserves, elements in a valuation, valuation methods, and the examination and report.

The aim of the book, says the author, is to help close the gap especially for younger engineers, with a review of the meaning and scope of valuation in the oil business, the factors which enter a valuation, and the methods of applying these. Questions which arise in valuation practice and the avenues of solution are discussed rather than efforts, in these days of rapid changes, to provide specific answers and detailed lists of equipment costs.

Procedure Handbook of Arc Welding

Keeping pace with the advancements being made in arc welding, the seventh edition of Lincoln Electric's "Procedure Handbook of Arc Welding Design and Practice" is at once a textbook and valuable one-volume reference library on the latest accepted developments of arc-welding art and its practice in the industries, with particular emphasis on those now wholly or almost exclusively devoted to war effort.

Discussing welding methods and equipment in the first part, the book develops the technique of welding in the succeeding section, discussing procedures, speeds and costs in part three.

Part four treats of weld metal and testing, followed by a comprehensive discussion of weldability of metals. In part six is taken up the matter of welded steel construction and its relation to machine design. Part seven deals adequately with the design of arc-welded structures, being followed by a detailed description of many typical applications of arc welding in manufacturing, construction and maintenance.

Reference data for further reading on arc-welding is listed in a separate bibliography, and the book is equipped with a comprehensive index furnishing ready means for locating any portion of the material within the 1252 pages of the volume.

The book is edited by and published under the supervision of The Lincoln Electric Company, 12818 Coit Road, Cleveland, Ohio, which has set a price of $1.50 for the book in the United States, and a foreign price of $2.00. It may be obtained through the book department of The Gulf Publishing Company or through Lincoln dealers and representatives.

Heater Standards

Heat Exchange Institute, 90 West Street, New York, has anounced the publication of a new standard to complement its series on surface and barometric condensers, and steam jet ejector standards.

The new publication is entitled "Standards of the Non-Deaerating Heater Section" and contains recommendations on nomenclature, definitions, construction, ratings, accessories, and a typical specification.

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